

### 3.33 Test Excavation 138 (T-138)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	7712:6
<b>TMK#:</b>	2-1-030:001
<b>Elevation Above Sea Level:</b>	1.48 m
<b>UTM:</b>	618328.79 mE, 2355883.08 mN
<b>Max Length/Width/Depth:</b>	6.10 m / 0.70 m / 1.60 m
<b>Orientation:</b>	143 / 323° TN
<b>Targeted Project Component:</b>	Station Building
<b>USDA Soil Designation:</b>	Ewa silty clay loam (EmA)

**Setting:** Test Excavation 138 (T-138) was located 11 m southwest of Halekauwila Street within a parking lot. T-138 was located on private property. T-138 was moved by 0.56 m northeast from its original location. The excavation surface was level with the surrounding land surface.

**Summary of Background Research and Land Use:** In 1883, the landscape that surrounded T-138 was largely undeveloped and included three small ponds to the northwest of T-138 (1883 Baldwin map). The 1884 Bishop Honolulu Kewalo map showed T-138 within LCA 7712:6 which was awarded to V. Kamāmalu. The 1897 Monsarrat Honolulu map showed T-138 still located southeast of three small ponds and further evidence of urban development in the surrounding areas. According to the 1919-1953 War Honolulu maps, all ponds had been filled in within the vicinity of T-138 and urban development had continued to spread throughout the area.

Previous archaeological investigations within the vicinity of T-138 included several studies, including archaeological investigations at the Honuakaha cemetery which identified 152 burials (SIHP # 50-80-14-4531 and SIHP # 50-80-14-3712) approximately 60 m east of T-138 (Pfeffer, Borthwick, and Hammatt 1993, and Avery and Kennedy 1993). T-138 was located within the boundaries of an archaeological inventory survey conducted by Pammer, Fong, and Hammatt (in progress-2011), where four historic properties were identified, including SIHP # 50-80-14-7124, historic building structures, a burnt historic trash layer (-7189), salt pan remnants (-7190), and a late pre-Contact/post-Contact cultural layer containing one pit feature (-7197). Additionally, T-138 was situated 90 m south of previous archaeological study by Winieski and Hammatt (2001), which documented a remnant of the Light-Gauge Rail (SIHP# -5942). An archaeological study conducted by Leidemann (1988), 144 m northwest of T-138, identified one post-Contact subsurface cultural deposit (SIHP #-1973). During archaeological monitoring for the Pohulani Elderly Rental Housing and surrounding areas located 36 m southwest from T-138, two groupings of burials were identified, including nine finds at the Pohulani Elderly Rental Housing (SIHP #- 4380) where three were preserved in place, and eleven burials were disinterred around Mother Waldren Park (SIHP #- 5820).

**Documentation Limitations:** T-138 was excavated to a depth of 1.60 mbs. The water table was located at 1.55 mbs. There were no specific factors that limited documentation of T-138.

**Stratigraphic Summary:** The stratigraphy of T-138 consisted of fill strata overlying natural sediment to the base of excavation. Observed strata included asphalt (Ia), very gravelly sandy loam (Ib), sandy loamy silty clay (Ic), very gravelly sand (Id), gravelly silty sandy loam (Ie), sandy silty loam (If), gravelly sandy silty loam (Ig), and very gravelly silty loamy sand (Ih) overlying sandy silty loam (II), and a natural silty clay (III) to the water table. The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA).

**Artifacts Discussion:** A total of nine (9) artifacts (Acc. # 138-A-1 to A-9, see following table and photographs) were collected from T-138, Stratum Ih. The ceramics consisted of one stoneware bottle, three Asian wide-shouldered jars, and one Asian liquor warmer. The stoneware bottle had a Bristol-glaze, used by English and American potteries from 1835-1900. Three complete bottles were collected; two of these can be dated to the 1870s-1920s time period. One glass marble was also recovered. Artifacts collected from Stratum Ih indicate that the fill was deposited in the late nineteenth-early twentieth century.

**Feature Discussion:** No features were observed.

**Terrestrial Faunal Remains Collected During Excavation:** Faunal remains collected individually during excavation from Stratum II (at 1.2 mbs) consisted of *Bos taurus*, medium mammal and unidentified Aves (bird). One of the *Bos taurus* bones showed marks from being butchered by a metal blade.

**Sample Results:** One bulk sediment sample (3.8 L) was collected from Stratum III at a depth of 1.50 mbs. The sediment sample was wet-screened. The sediment sample from Stratum III contained charcoal (0.1 g), naturally-occurring, water-rounded marine shell (5.1 g), Mytilidae *Brachidontes crebristriatus* (23.6 g), unidentified burned shell fragments (7.2 g), Crustacean (0.2 g), Echinodermata *mathaei* sp. (0.1 g), *Ruppia maritima* seeds (5.0 g), small rusted metal fragments (0.5 g), and an unidentified fish bone (0.1 g).

Sample analysis identified possible traditional food refuse (shell midden and fish bone) and historic artifacts (small metal fragments) within Stratum III.

**GPR Discussion:** A review of amplitude slice maps indicated no linear features which might indicate the presence of utilities. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.25 mbs.

GPR depth profiles for T-138 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.1 mbs. No utilities were observed in the profile. The maximum depth of clean signal return was approximately 1.0 mbs.

**Summary:** T-138 was excavated to a depth of 1.60 mbs and beneath the water table at 1.55 mbs. The stratigraphy of T-138 consisted of fill strata (Ia-Ih) overlying natural sediment (II). The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA). A total of nine (9) artifacts (Acc. # 138-A-1 to A-9) were collected from T-138, Stratum Ih. Artifacts collected from Stratum Ih indicate that the fill was deposited in the late nineteenth-early twentieth century. Faunal remains collected individually during excavation from Stratum II (at 1.2 mbs) consisted of *Bos taurus*, medium mammal and unidentified Aves (bird). One of the *Bos*

*taurus* bones showed marks from being butchered by a metal blade. One bulk sediment sample (3.8 L) was collected from Stratum III at a depth of 1.50 mbs. Sample analysis identified possible traditional food refuse (shell midden and fish bone) and historic artifacts (small metal fragments) within Stratum III. Stratum II is considered to be a component of SHIP# 50-80-14-7189, a fill layer containing burnt historic trash (see Volume 1).

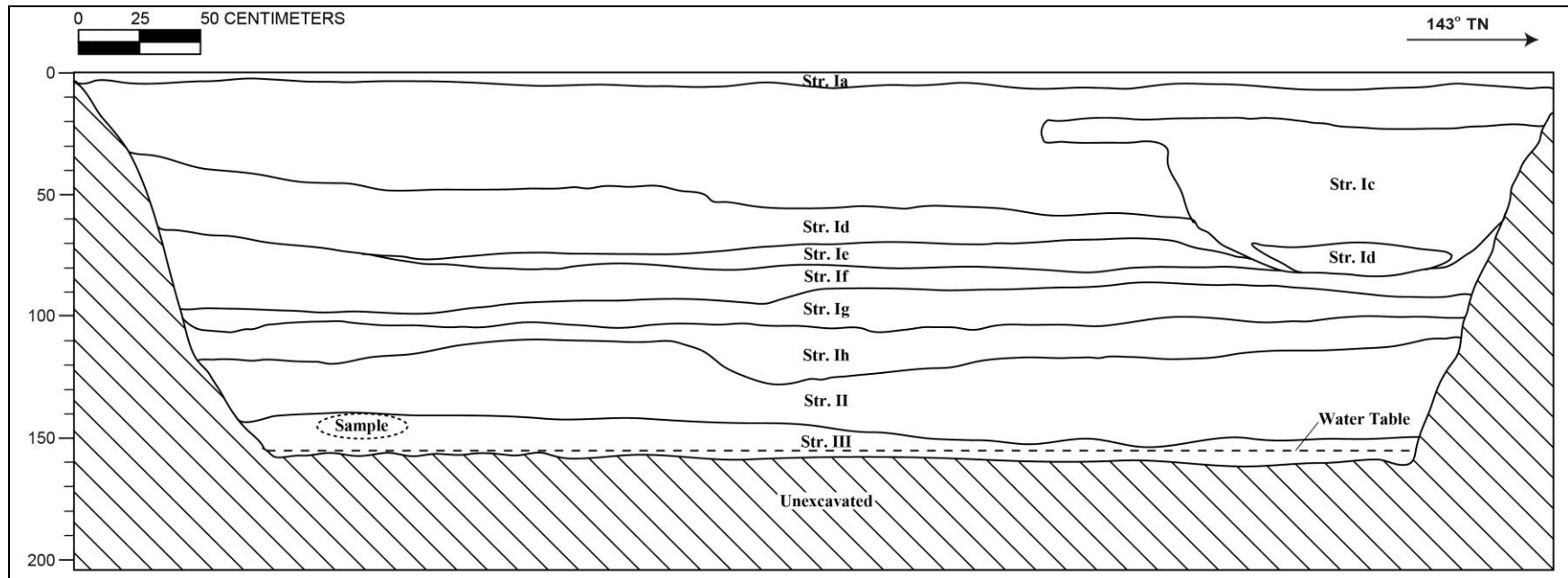


T-138 general location, view to northwest



T-138 northeast profile wall, view to southeast





T-138 northeast wall profile

## T-138 Stratigraphic Description

Stratum	Depth (mbs)	Description
Ia	0-5	Asphalt
Ib	5-58	Fill; 10 YR 3/3 (dark brown); very gravelly sandy loam; structureless, single-grain; moist, friable consistency; non-plastic; terrigenous origin; abrupt, broken/discontinuous lower boundary; contains slag, rebar, concrete, and glass marble
Ic	17-81	Fill; 10 YR 5/2 (grayish brown); sandy loamy silty clay; structureless massive; wet, sticky structure; plastic; terrigenous origin; abrupt, broken/discontinuous lower boundary; pit fill material
Id	58-73	Fill; 10 YR 8/4 (very pale brown); very gravelly sand; structureless, single-grain; dry, loose consistency; non-plastic; marine origin; abrupt, broken/discontinuous lower boundary; crushed coral fill
Ie	67-82	Fill; 10 YR 4/3 (brown); gravelly silty sandy loam; weak, medium blocky structure; moist, friable consistency; slightly plastic, terrigenous origin, clear, broken/discontinuous lower boundary;
If	63-98	Fill; 10 YR 3/3 (dark brown); sandy silty loam; weak, very fine, crumb structure, moist, friable structure; non-plastic; mixed origin; clear, smooth lower boundary
Ig	85-105	Fill; 10 YR 3/2 (very dark grayish brown); gravelly sandy silty loam; weak, fine blocky structure; moist, friable consistency; non-plastic; mixed origin; clear, smooth lower boundary; bands of black charcoal material within stratum
Ih	97-139	Fill; 10 YR 2/2 (very dark brown); very gravelly silty loamy sand; weak, fine, crumb structure; moist, friable consistency; non-plastic, terrigenous origin; wavy lower boundary
II	110-140	Fill; 10 YR 2/1 (black); sandy silty loam; structureless, single-grain; moist; very friable consistency; non-plastic; mixed origin; diffuse, smooth lower boundary; contained bottles, ceramic jar, faunal bones, SIHP # 7189, burnt historic debris
III	140-160	Natural; 10 YR 4/1 (dark gray); silty clay; structureless, massive; wet, slightly sticky consistency; plastic; marine origin; possible natural marine clay; small marine mollusks

T-138 Artifact Analysis Table.

Acc. # 138-A-	Provenience	Ceramic Vessel Type	Portion	No.	Paste; Decor	Origin; Age	Comments
1	T-138, St. II	Bottle	Complete	1	Stoneware Slip glaze	Anglo / American; 1835-1900	Bristol-glaze
2	T-138, St. II	Jar	Complete	1	Stoneware Slip glaze	Asian	Wide-shouldered jar
3	T-138, St. II	Jar	Base to rim	1	Stoneware; Slip glaze	Asian	Wide-shouldered jar
4	T-138, St. II	Jar	Base to rim	1	Stoneware	Asian	Wide-shouldered jar
5	T-138, St. II	Hollowware - Liquor Warmer	Base to rim	1	Porcelain; Painted underglaze	Asian	Sweet Pea motif; spout missing
Acc. # 138-A-	Provenience	Glass Bottle Type	Portion	No.	Color	Origin; Age	Comments
6	T-138, St. II	Bottle, Medicine	Complete	1	Aqua	American; 1874- 1920s	Parke Davis & Co.
7	T-138, St. II	Bottle, Beverage	Complete	1	Brown	1870-1890	Push-up base
8	T-138, St. II	Bottle, Medicine	Complete	1	Clear	American; 1870-1906	Davis Vegetable Painkiller"
Acc. # 138-A-	Provenience	Miscellaneous Type	Portion	No.	Material	Origin; Age	Description
9	T-138, St. Ib	Marble	Complete	1	Glass		White, purple and gray swirls



T-138 stoneware bottle and jar (Acc. # 138-A-1 to A-2) collected from Stratum II



T-138 stoneware jars and ceramic liquor warmer (Acc. # 138-A-3 to A-5) collected from Stratum II



T-138 glass bottle (Acc. # 138-A-6) collected from Stratum II



T-138 glass bottles (Acc. # 138-A-7 to A-8) collected from Stratum II



### 3.34 Test Excavation 139 (T-139)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	7712:6
<b>TMK#:</b>	2-1-030:001
<b>Elevation Above Sea Level:</b>	1.63 m
<b>UTM:</b>	618331 mE, 2355872.29 mN
<b>Max Length/Width/Depth:</b>	6.13 m / 0.74 m / 1.90 m
<b>Orientation:</b>	142 / 322° TN
<b>Targeted Project Component:</b>	Station Building
<b>USDA Soil Designation:</b>	Ewa silty clay loam (EmA)

**Setting:** Test Excavation T-139 was located in a parking lot southwest of Halekauwila Street, approximately 20 m west of the intersection of Halekauwila and Keawe Street. T-139 was located on private property. An electrical utility line was located 3.3 m southeast of T-139. The excavation surface was level with the surrounding land surface.

**Summary of Background Research and Land Use:** In 1883, the landscape that surrounded T-139 was undeveloped and included three small ponds to the northwest of T-139 (1883 Baldwin map). The 1884 Bishop Honolulu Kewalo map showed T-139 within LCA 7712:6 which was awarded to V. Kamāmalu. The 1897 Monsarrat Honolulu map showed T-139 was still located southeast of three small ponds and further evidence of urban development in the surrounding areas. According to the 1919-1953 War Honolulu maps, all ponds had been filled in within the vicinity of T-139 and urban development had continued to spread throughout the area.

Previous archaeological investigations within the vicinity of T-139 included archaeological investigations at the Honuakaha cemetery which identified 152 burials (SIHP # 50-80-14-4531 and SIHP # 50-80-14-3712) approximately 70 m east of T-139 (Pfeffer, Borthwick, Hammatt 1993, and Avery and Kennedy 1993). T-139 is situated 98 m south of previous archaeological study by Winieski and Hammatt (2001), which documented a remnant of the Light-Gauge Rail (SIHP# -5942). An archaeological study conducted by Leidemann (1988), 140 m northwest of T-139, included one post-Contact subsurface cultural deposit SIHP #-1973. During archaeological monitoring for the Pohulani Elderly Rental Housing (Winieski and Hammatt 2000) and surrounding areas located 39 m southwest from T-139, two groupings of burials were identified, including nine finds at the Pohulani Elderly Rental Housing (SIHP #- 4380) where three were preserved in place, and eleven finds were disinterred around Mother Waldren Park (SIHP #-5820).

**Documentation Limitations:** T-139 was excavated to a depth of 1.90 mbs and beneath the water table at 1.78 mbs. There were no specific factors that limited documentation of T-139.

**Stratigraphic Summary:** The stratigraphy of T-139 consisted of fill strata to the base of excavation. Observed strata included asphalt (Ia), gravelly sandy clay loam (Ib), gravelly silty clay (Ic), very gravelly sandy silty clay (Id), and extremely gravelly sand fill (Ie) to the base of

excavation. The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA).

**Artifacts Discussion:** One artifact (Acc. # 139-A-1) was collected from Stratum Ib at 0.1-0.45 mbs. The artifact is a bone toothbrush handle. The artifact collected from Stratum Ib is consistent with late nineteenth to early twentieth century fill.

**Features Discussion:** No features were observed.

**Terrestrial Faunal Remains Collected During Excavation:** Faunal remains were collected individually during excavation from Stratum Ib (0.1-0.45 mbs). These consisted of *Equus ferus caballus*, *Bos taurus*, *Capra aegagrus hircus*, *Felis catus*, and unidentified Aves (bird) skeletal elements. None of the bones showed any evidence of cultural modification. It can be concluded from the presence of introduced species (*Equus ferus caballus*, *Bos taurus*, *Capra aegagrus hircus* and *Felis catus*) that this is a post-Contact context and not of traditional Hawaiian origin.

**Sample Results:** One bulk sediment sample (3.8 L) was collected from the excavator bucket, the sediment having been scooped from Stratum Ie at approximately 2.0 mbs. The sample was wet-screened. The sediment sample from Stratum Ie contained Mytilidae *Brachidontes crebristriatus* (20.7 g), Trochidae (1.4 g), burned shell (1.2 g), crustacean (1.2 g), Isognomidae *Isognomon* sp. (0.2 g), Echinodermata *mathaei* sp. (0.1 g), and naturally-occurring, water-rounded marine shell (3.5 g).

The results of sample analysis indicated the presence of possible traditional food refuse (shell midden) within Stratum Ie.

**GPR Discussion:** A review of amplitude slice maps indicated no linear features which might indicate the presence of utilities. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.25 mbs.

GPR depth profiles for T-139 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.25 mbs. No utilities were observed in the profile. The maximum depth of clean signal return was approximately 1.0 mbs.

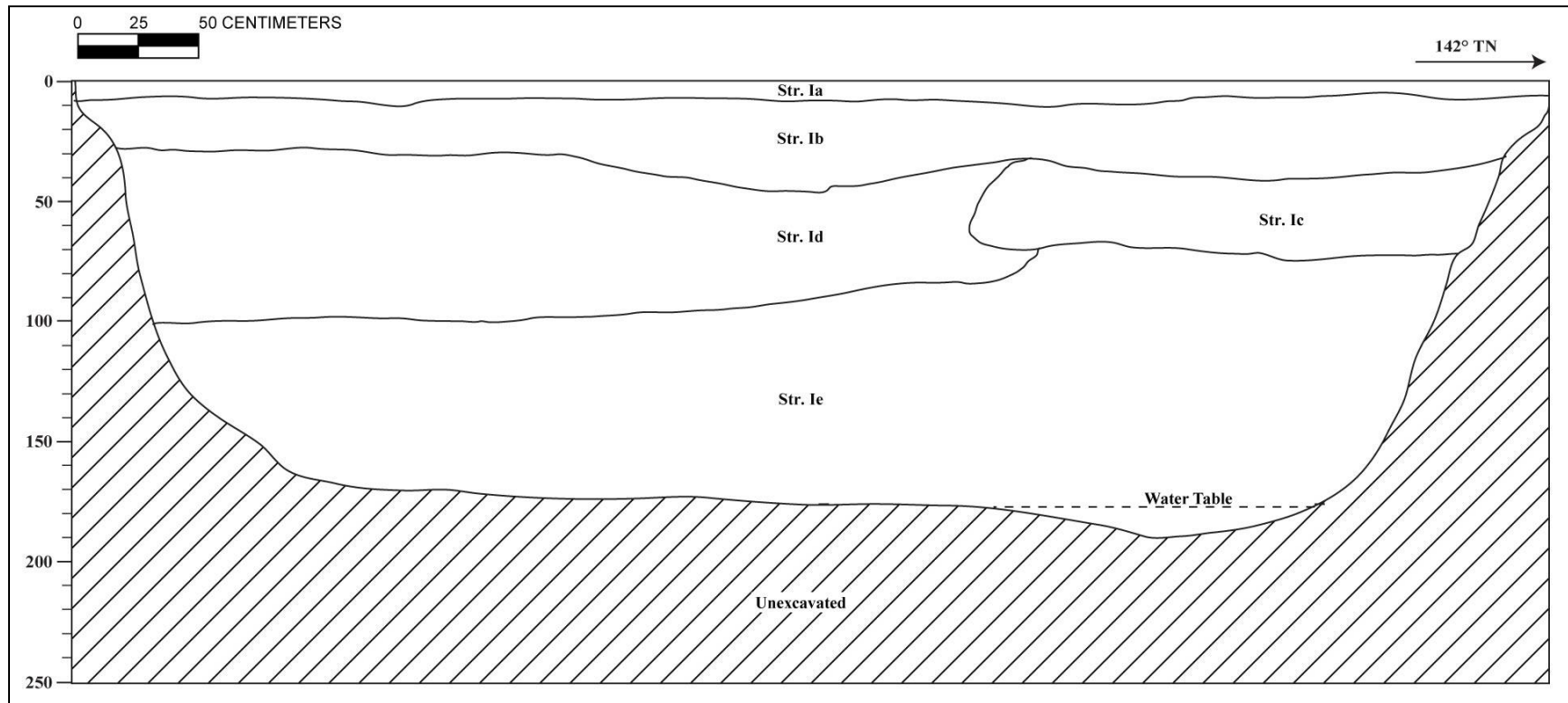
**Summary:** T-139 was excavated to a depth of 1.90 mbs and beneath the water table at 1.78 mbs. The stratigraphy of T-139 consisted of fill strata (Ia-Ie) to the base of excavation. The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA). One artifact (Acc. # 139-A-1) was collected from Stratum Ib at 0.1-0.45 mbs. The artifact is a bone toothbrush handle. The artifact collected from Stratum Ib is consistent with late nineteenth to early twentieth century fill. One bulk sediment sample (3.8 L) was collected from the excavator bucket, the sediment having been scooped from Stratum Ie at approximately 2.0 mbs. The results of sample analysis indicated the presence of possible traditional food refuse (shell midden) within Stratum Ie. No cultural resources were identified within T-139.



T-139 general location, view to north



T-139 northeast profile wall, view to north



T-139 northeast wall profile

## T-139 Stratigraphic Description

Stratum	Depth (mbs)	Description
Ia	0-10	Asphalt
Ib	10-45	Fill; 10 YR 3/2 (very dark grayish brown); gravelly sandy clay loam; weak, fine, crumb structure; moist, friable consistency; slightly plastic; mixed origin; abrupt, smooth lower boundary; contained faunal remains; gravel base course
Ic	40-77	Fill; 10 YR 5/2 (grayish brown); gravelly silty clay; moderate, fine, platy structure; moist, firm consistency; plastic; terrigenous origin; abrupt, broken/discontinuous lower boundary
Id	50-102	Fill; 10 YR 5/2 (grayish brown); very gravelly sandy silty clay; weak, fine, crumb structure; moist, firm consistency; slightly plastic; mixed origin; abrupt, broken/discontinuous lower boundary; contained faunal pig tooth, and cow fragment
Ie	70-190	Fill; 2.5 Y 6/1 (gray); extremely gravelly sand; strong, medium crumb structure; moist, firm consistency; non-plastic; mixed origin; lower boundary not visible



### 3.35 Test Excavation 140 (T-140)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	7712:6
<b>TMK#:</b>	2-1-051 [Plat]
<b>Elevation:</b>	1.44 m
<b>UTM:</b>	618364 mE, 2355866 mN
<b>Max Length / Width / Depth:</b>	6.1 m / 0.72 m / 1.48 m
<b>Orientation:</b>	146 / 326° TN
<b>Targeted Project Component:</b>	Utility relocation(Electric Manhole)
<b>USDA Soil Designation:</b>	Ewa silty clay loam (EmA)

**Setting:** Test Excavation 140 (T-140) was located in the center of Halekauwila Street, 5 m southeast of the intersection of Halekauwila and Keawe Street. T-140 was located on city-owned property. Utilities within the vicinity included a storm drain 1.3 m northwest, an electric line 1.5 m southwest, and a water line 3.8 m southwest of T-140. The excavation surface was level with the surrounding land surface.

**Summary of Background Research and Land Use:** The excavation area was within LCA 7712: 6, awarded to V. Kamāmalu, and 30 m south of LCA 677 (one house lot, awarded to Mataio Kekūānāo'a). The surrounding area was composed of a wetland environment. The 1887 Wall map indicated that the shoreline had been extended. Development in the area included main streets such as Queen Street and Halekauwila Street and large buildings within the vicinity. By 1897 the Monsarrat Honolulu map indicated that urban development was occurring within the area. Heavy development of the Kaka'ako area continued through 1953, and the 1953 Army Mapping Service map showed T-140 located in modern day Halekauwila and Keawe Street within the proximity of Mother Waldron Playground.

A number of previous archaeological studies were conducted within the vicinity of T-140. In 1991 a total of eight human burials (SIHP # -4380) were recorded near Coral and Queen Street (Douglas 1991a & b). In 2000, Winieski and Hammatt performed archaeological monitoring at the Kaka'ako Improvement District 3 area in which a total of 20 human burials were encountered; nine burials (SIHP # -4380) were discovered at the Pohulani Elderly Rental Housing and eleven burials (SIHP # -5820) were identified in and around Mother Waldron Park (Winieski & Hammatt 2000a). In 2009 an archaeological inventory survey was performed in which material representing a former marsh/pond sediment of the pre-Contact and pre-Hawaiian occupation was recovered (O'Hare et al. 2009). Similar results were also observed in 2009 as clay sediments consistent with a wet, marshy environment were observed during an archaeological assessment of the proposed Halekauwila Place Project (Tulchin et al. 2009). An archaeological inventory survey was conducted in 2011 and identified a historical property area consisting of historic building remnant features (SIHP # -7124), an extensive layer of burnt historic debris (SIHP # -7189), old salt pan remnants (SIHP # - 7190), and a sandy cultural layer

containing one pre-Contact/early post-Contact fire pit feature (SIHP # 7197) (Pammer et al. 2011).

**Documentation Limitations:** T-140 was excavated to the coral shelf at 1.39 mbs. There were several utilities present which prevented excavation in certain areas of T-140, including a concrete jacket located within the southeast end of T-140 at 0.40 mbs. Excavation was also disrupted within the northwest portion of T-140 at 0.90 mbs due to the presence of a cast iron pipe.

**Stratigraphic Summary:** The stratigraphy of T-140 consisted of fill strata overlying natural sediment to the coral shelf. Observed strata included asphalt (Ia), very gravelly loam (Ib), very gravelly loam (Ic), very gravelly loam (Id), gravelly sandy silty loam (associated with concrete jacket) (Ie), cobbly sand (If), sandy clay loam (Ig), and silty clay fill (Ih) overlying natural clay (II-III). The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA).

**Artifacts Discussion:** Ten (10) historic artifacts (Acc. # 140-A-1 to A-10, see following table and photographs) were collected from Stratum Ih. Five ceramic fragments from five vessels were collected; the porcelain vessels had various Asian motifs. Five glass fragments from five bottles were collected. Two bottles were from local Honolulu bottlers and were dated from 1863-1871, and 1882-1901. Artifacts collected from Stratum Ih indicate a late nineteenth century fill event.

**Features Discussion:** No features were observed.

**Terrestrial Faunal Remains Collected During Excavation:** No terrestrial faunal remains were individually collected during excavation.

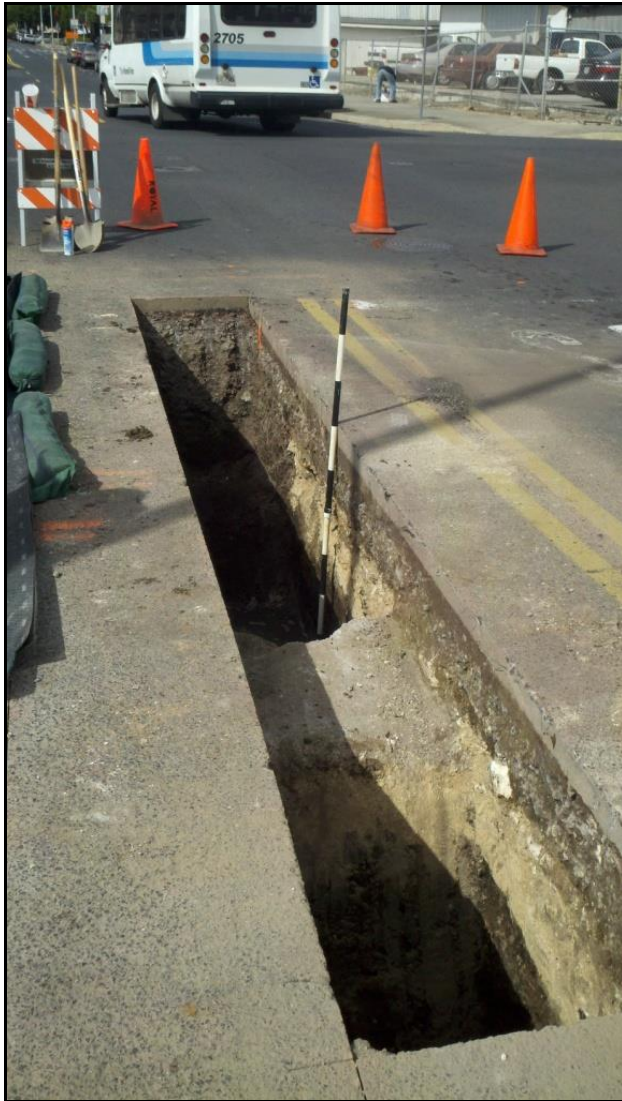
**Sample Results:** One bulk sediment sample (3.5 L) was collected from Stratum II between 1.20 and 1.34 mbs. The sample contained charcoal (1.3 g), burned crustacean (3.9 g), burned shell (0.9 g), and seeds of *Ruppia maritima* (0.4 g). Sample results indicated the presence of possible traditional food refuse (shell midden) within Stratum II.

**GPR Discussion:** A review of amplitude slice maps indicated no linear features although a concrete jacket and a pipe were encountered during excavation. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.25 mbs.

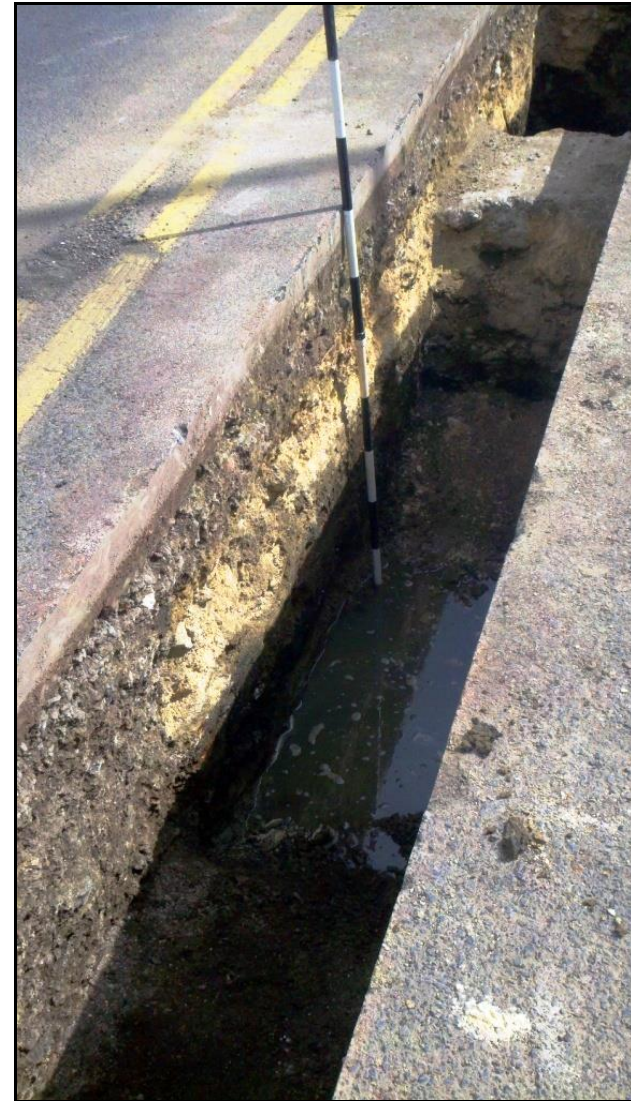
GPR depth profiles for T-140 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.25 mbs. No utilities were observed in the profile although a concrete jacket and pipe were encountered during excavation. The maximum depth of clean signal return was approximately 1.0 mbs.

**Summary:** T-140 was excavated to the coral shelf at 1.39 mbs. The stratigraphy of T-140 consisted of fill strata (Ia-Ie) overlying natural sediment (II-III) to the coral shelf. The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA). Ten (10) historic artifacts (Acc. # 140-A-1 to A-10) were collected from Stratum Ih. Artifacts collected from Stratum Ih indicate a late nineteenth century fill event. One bulk sediment sample (3.5 L) was collected from Stratum II between 1.20 and 1.34 mbs. Sample results indicated the

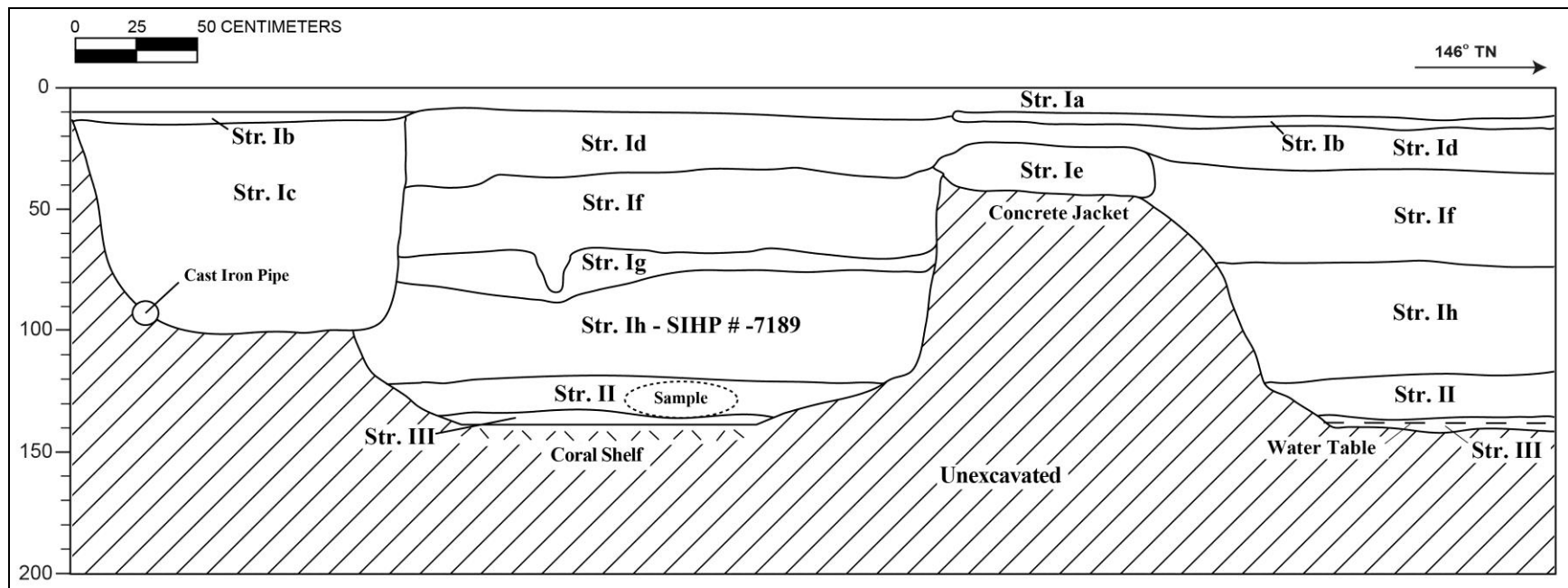
presence of possible traditional food refuse (shell midden) within Stratum II. Stratum Ih was considered to be a component of SIHP# 50-80-14-7189, a fill layer containing historic trash (see Volume 1).



T-140 general location, view to north



T-140 northeast profile wall, view to east



T-140 northeast wall profile



## T-140 Stratigraphic description

Stratum	Depth (cmbs)	Description
Ia	0-10	Asphalt
Ib	10-14	Fill; 10 YR 3/2 (very dark grayish brown); very gravelly loam; structureless, single-grain; moist; loose consistency; non-plastic; terrigenous origin; abrupt, smooth lower boundary; gravel base course
Ic	14-100	Fill; 10 YR 4/2 (dark grayish brown); very gravelly loam; structureless, single-grain; moist, loose consistency; non-plastic; terrigenous origin; lower boundary not visible; subangular basalt gravel fill
Id	14-40	Fill; 10 YR 4/2 (dark grayish brown); very gravelly loam; structureless, single-grain; moist, loose consistency; non-plastic; terrigenous origin; clear, smooth lower boundary; subangular basalt gravel fill
Ie	21-45	Fill; 10 YR 5/3 (brown); gravelly sandy silty loam; structureless, single-grain; moist, friable consistency; non-plastic; mixed origin; very abrupt, smooth lower boundary; fill associated with concrete jacket
If	25-85	Fill; 5 Y 8/2 (pale yellow); cobbly sand; structureless, single-grain; moist, loose consistency; non-plastic; marine origin; very abrupt, smooth to wavy lower boundary; crushed coral fill
Ig	65-89	Fill; 10 YR 5/3 (brown); sandy clay loam; structureless, single-grain; wet, non-sticky; non-plastic; mixed origin; clear, wavy lower boundary; brown fill above burnt trash layer
Ih	70-120	Fill; 10 YR 2/1 (black); silty clay; structureless, massive; wet, non-sticky; non-plastic; mixed origin; clear, smooth lower boundary; contained trash pit – ceramics, bottles, cut bone, metal, wood, charcoal; trash layer containing numerous artifacts SIHP# 50-80-14-7189
II	115-136	Natural, 10 YR 4/2 (dark grayish brown); clay; structureless, massive; wet, slightly sticky consistency; slightly plastic; terrigenous origin; clear, smooth lower boundary; buried A-horizon; some tiny land snails, sample taken
III	136-139	Natural, 10 YR 3/2 (very dark grayish brown); clay; structureless, massive; wet, sticky consistency; slightly plastic; terrigenous origin; lower boundary not visible

T-140 Artifact Analysis Table.

Acc. # 140-A-	Provenience	Ceramic Vessel Type	Portion	No.	Paste; Decoration	Origin; Age	Comments
1	T-140, St. Ih		Base to rim	1	Porcelain; Transfer print	Asian	Dashed-line transfer-print; geometric design on interior rim
2	T-140, St. Ih		Base to rim	1	Porcelain; Transfer print		blue dots & curlicues, thin line
3	T-140, St. Ih	Crock/ Jar	Base	1	Earthenware; Embossed		Embossed horizontally on body: "MR. ADAMS, ...OBE KILLE..."
4	T-140, St. Ih	Hollowware - bowl (Asian)	Base to body	1	Porcelain; Painted underglaze	Asian	Sweet Pea motif; high foot
5	T-140, St. Ih	Dinnerware (Asian)	Rim	1	Porcelain; Transfer print	Asian	Dashed-line transfer-print
Acc. # 140-A-	Provenience	Glass Bottle Type	Portion	No.	Color	Origin; Age	Comments
6	T-140, St. Ih	Bottle, Soda	Complete	1	Aqua	American; 1863-1871	H & H; Hollister & Hyland, Honolulu
7	T-140, St. Ih	Bottle, Spirits	Complete	1	Clear	1820-1890	
8	T-140, St. Ih	Bottle, Soda	Base-shoulder	1	Green, Light	American; 1882-1901	Tahiti Lemonade Works Co., Honolulu
9	T-140, St. Ih	Bottle, Boot polish	Complete	1	Clear	American; 1838-late 1800s	Frank Miller's Crown Dressing
10	T-140, St. Ih	Bottle, Spirits	Complete	1	Clear	1880s-post	



T-140 ceramic artifact fragments (Acc. # 140-A-1 to A-3) –exterior - rom Stratum Ih



T-140 ceramic artifact fragments (Acc. # 140-A-1 to A-3) – interior - from Stratum Ih



T-140 ceramic artifact fragments (Acc. # 140-A-4 to A-5) – interior - from Stratum Ih



T-140 ceramic artifact fragments (Acc. # 140-A-4 to A-5) – exterior - from Stratum Ih



T-140 glass bottle artifacts (Acc. # 140-A-6 to A-8) from Stratum Ih



T-140 glass bottle artifacts (Acc. # 140-A-9 and A-10) from Stratum Ih



### 3.36 Test Excavation 141 (T-141)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	982; 7712:6
<b>TMK#:</b>	2-1-051 [Plat]
<b>Elevation:</b>	1.5 m
<b>UTM:</b>	618372.79 mE, 2355872.39 mN
<b>Max Length/Width/Depth:</b>	3.05 m / 0.93 m / 1.52 m
<b>Orientation:</b>	330 / 150° TN
<b>Targeted Project Component:</b>	Guideway Column
<b>USDA Soil Designation:</b>	Ewa silty clay loam (EmA)

**Setting:** Test Excavation (T-141) was excavated on City and County of Honolulu property located on the northeast corner of Halekauwila and Keawe Street. Utilities within the vicinity included an electric line located approximately 3.3 m southwest, a gas line approximately 5.3 m southwest, and a sewer line approximately 5.9 m southwest of T-141. The excavation area was located on a slightly elevated parking lot in relation to the surrounding surface.

**Summary of Background Research and Land Use:** The excavation area was located in LCA 7712: 6 (awarded to Mataio Kekūānāo'a). The southeast corner of T-141 was in LCA 982 [1 house lot (4 houses): awarded to Kukao], and 22.4 m south of LCA 677 [1 house lot (2 houses): awarded to Queen Emma to Mataio Kekūānāo'a]. The surrounding area was composed of a wetland environment. The 1887 Wall map indicated that the shoreline was extended. T-141 was approximately 2.8 m east of a fenced field area. Development in the area included main streets such as Queen Street and Halekauwila Street and large buildings within the vicinity. By 1897, the Monsarrat Honolulu map indicated that urban development was occurring within the area. Heavy development of the Kaka'ako area continued through 1953 as the 1953 Army Mapping Service map situated T-141 perpendicular to Mother Waldron Playground located near the border of modern day Halekauwila and Keawe Street.

A number of previous archaeological studies were done within the area of T-141. In 1991, a total of eight human burials (SIHP # 50-80-14-4380) were recorded near Coral and Queen Street (Douglas 1991 a and b). In 2000, CSH conducted archaeological monitoring at the Kaka'ako Improvement District 3 area, which included the location of T-141. A total of twenty human burials were encountered; nine burials (SIHP # 50-80-14-4380) were discovered at the Pohulani Elderly Rental Housing and eleven burials (SIHP # 50-80-14-5820) in and around Mother Waldron Park (Winieski and Hammatt 2000a). Three of the burials identified within SIHP# - 5820 are located in close proximity to T-141 including one burial located 7.5 m to the south and two burials located 17.5 m to the north. In 2009, CSH conducted an archaeological inventory survey in which material representing former marsh or pond sediment was encountered (O'Hare et al 2009). Similar results were reported during an archaeological assessment of the proposed Halekauwila Place Project (Tulchin et al 2009). An archaeological inventory survey completed by CSH in 2011, identified historic building remnants (SIHP # 50-80-14-7124), an extensive

layer of burnt historic debris (SIHP # 50-80-14-7189), old salt pan remnants (SIHP # 50-80-14-7190), and a subsurface cultural layer (SIHP # 50-80-14-7197) within the an adjacent parking lot on the opposite corner of Halekauwila Street and Kiawe Street as T-141 (Pammer et al. 2011).

**Documentation Limitations:** T-141 was excavated to the coral shelf at a depth of 1.52 mbs and beneath the water table at 1.51 mbs. All of the natural sediment within T-141 was hand-excavated to the coral shelf. All sediment from the buried A-horizon (II) within T-141 was screened in an effort to identify isolated human skeletal remains.

**Stratigraphic Summary:** The stratigraphy of T-141 consisted of multiple fill layers over natural sediment. The stratigraphy of both the southwest and northeast excavation sidewalls was recorded. The observed strata of the southwest (*makai*) wall included asphalt (Ia), very gravelly silt loam (Ib), sandy loam fill (Ic), extremely gravelly sand (Id), sandy loam fill (Ie), sandy loam fill (If), natural loamy sand (II), very fine sand (III), and natural silty sand (IV). The observed strata of the northeast (*mauka*) wall included asphalt (Ia), very gravelly silt loam (Ib), gravelly sand (Ic), sandy loam (Id), sandy clay (II), natural very fine sand (III), and natural silty sand (IV). The stratigraphy did not conform to the USDA soil designation of Ewa silty clay loam (EmA).

**Artifact Discussion:** One traditional Hawaiian artifact (Acc. # 141-A-1), a basalt stone sinker, was collected from the upper boundary of Stratum III at 0.70 mbs. Twelve (12) fragments consisting of eleven (11) historic artifacts (Acc. # 141-A-1 to A-11, see following table and photographs) were collected from T-141, Strata Id and II. One small red brick fragment was collected at 0.48 mbs within Stratum Id. Metal, plastic and stone was collected from Stratum II. Eight ceramic fragments from seven vessels were collected from Stratum II. The majority of these were from Asian-style bowls and dinnerware. None of the artifacts could be dated to a narrow manufacturing time range.

**Feature Discussion:** A total of four features (Feature 1-4) were identified within T-141, extending from the base of or from within the buried A-horizon (II). The buried A-horizon (II) has been designated as a component of SIHP# 50-80-14-5820, which has also been identified within T-142, T-145, T-146A, T-150, T-151, and T-151A. The four features within T-141 have been designated as Features 1-4 of SIHP# -5820.

SIHP# -5820 Feature 1 appeared to be a large, previously disturbed pit that was identified within Stratum II, extending from 0.55 mbs to 1.15 mbs. The feature has been truncated by a mixed fill pit that originates from the lower boundary of Stratum Ic. The upper portion of Feature 1 (0.55-0.77 mbs) contained isolated and disarticulated human skeletal elements. Human skeletal elements were also found within the adjacent mixed fill pit and along the upper boundary of Stratum III (Jaucas sand), providing further evidence of the disturbance to Feature 1. A stone sinker (Acc. # 141-A-1) was identified immediately adjacent to the pit outline of Feature 1 within the upper boundary of Stratum III (Jaucas sand) at a depth of 0.70 mbs. Beneath the human skeletal remains within Feature 1, a complete, in situ horse burial was encountered between 0.77 mbs and 1.15 mbs. Charcoal was also observed within Feature 1 during excavation. All of the sediment within Feature 1 was screened in order to complete the recovery of human skeletal remains. The human skeletal remains that were identified within Feature 1 included both juvenile and adult skeletal remains representing a minimum number of three individuals.

SIHP# -5820 Feature 2 appeared to be a shallow, irregular-shaped pit that was identified at the lower boundary of Stratum II, extending from 0.71 mbs to 0.89 mbs. The feature was considered to be a pit of indeterminate function.

SIHP# -5820 Feature 3 appeared to be an elongated, irregular-shaped pit that was identified at the lower boundary of Stratum II, extending to the coral shelf (0.63 mbs-1.50 mbs). No cultural material was identified within the feature. Feature 3 appears to be a pit feature of indeterminate function.

SIHP# -5820 Feature 4 appeared to be a circular-shaped pit that was identified at the lower boundary of Stratum II, extending from 0.75 mbs to 0.95 mbs. The feature was considered to be a pit of indeterminate function.

**Terrestrial Faunal Remains Collected During Excavation:** Faunal remains were collected individually during excavation from Strata II, Feature 1 (0.45-0.58 mbs) and Feature 2 (0.89 mbs) of SIHP# 50-80-14-5820, as well as from a historic/modern utility excavation containing disturbed cultural material. The faunal remains collected from Feature 1 consisted of *Sus scrofa*, *Canis lupus familiaris* and Unidentified Aves (bird) skeletal elements from between 0.45 and 0.58 mbs, as well as an entire articulated *Equus ferus caballus* burial (0.77-1.15 mbs). None of these bones showed any evidence of cultural modifications; however a post-Contact origin for this feature is evident due to the presence of *Equus ferus caballus* (Horse) which was first brought to O'ahu in the early 1800s. The Feature 2 faunal collection consisted of a single unmodified *Sus scrofa* cranial fragment at 0.89 mbs.

The faunal remains collected from the historic/modern utility excavation area consisted of *Sus scrofa* and *Gallus gallus* skeletal elements. The *Sus scrofa* humerus showed evidence of butchering with a metal blade, indicating an historic origin, not traditional Hawaiian. However, the historic/modern utility excavation area is a disturbed context so it is unclear where the bones originated.

**Sample Results:** A total of three screened sediment samples were collected within T-141 including one from Stratum II, one from Feature 1, and one from Feature 2. No bulk sediment samples were collected for sample analysis due to the presence of isolated human skeletal remains within T-141.

A 20-liter screened sample of Stratum II, collected from 0.55-0.75 mbs, contained charcoal (3.1 g), possible marine shell midden (31.0 g), a large unidentified seed (3.1 g), unidentified rusted metal fragments (10.7 g), and ceramic fragments (2.9 g). The possible marine shell midden within the sample included Tellinidae *Tellina palatam* (18.9 g), Neritidae *Nerita picea* (6.2 g), Mytilidae *Brachidontes crebristriatus* (2.6 g), Gastropods fragments (1.2 g), Echinodermata *diadema sp./mathaei sp.* (0.7 g), Crustacean (0.6 g), Melampidae *Melampus sp.* (0.5 g), and Naticidae *Natica sp.* (0.3 g).

An 11-liter screened sample of Feature 1, collected from 0.83-0.1.17 mbs, contained charcoal (0.1 g), possible marine shell midden (20.6 g), naturally-occurring marine shell (9.4 g), and one medium mammal bone fragment (0.8 g). The possible marine shell midden within the sample included Tellinidae *Tellina palatam* (12.1 g), Mytilidae *Brachidontes crebristriatus* (3.2 g), Isognomidae (1.8 g), Neritidae *Nerita picea* (1.8 g), Crustacean (1.5 g), and Echinodermata (0.2 g).

A 10-liter screened sample of Feature 2, collected from 0.89 mbs, contained Echinodermata *diadema sp.* (0.5 g).

The results of sample analysis documented the presence of sparse cultural material within Stratum II, including historic artifacts. Similar cultural material was identified within Feature 1, which also contained a complete horse burial and isolated human skeletal remains. No significant material was recovered from the screened sample of Feature 2. Sample analysis supported the designation of the buried A-horizon (II) and associated features within T-141 as components of a subsurface cultural deposit (SIHP# -5820).

**GPR Discussion:** A review of amplitude slice maps indicated a linear feature but not within excavation boundaries. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.75 mbs.

GPR depth profiles for T-141 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.2 mbs. An anomaly was observed in the profile but not within excavation boundaries. The maximum depth of clean signal return was approximately 1.0 mbs.

**Summary:** T-141 was excavated to the coral shelf at a depth of 1.52 mbs and beneath the water table at 1.51 mbs. The stratigraphy of T-141 consisted of multiple fill layers over natural sediment. The stratigraphy did not conform to the USDA soil designation of Ewa silty clay loam (EmA). One traditional Hawaiian artifact (Acc. # 141-A-1), a basalt stone sinker, was collected from the upper boundary of Stratum III at 0.70 mbs. Twelve (12) fragments consisting of eleven (11) historic artifacts (Acc. # 141-A-1 to A-11) were collected from T-141, Strata Id and II. None of the artifacts could be dated to a narrow manufacturing time range. A total of four features (Feature 1-4) were identified within T-141, extending from the base of, or from within the buried A-horizon (II). The four features within T-141 have been designated at Feature 1-4 of SIHP# -5820. T-141 contained several different species of faunal remains including but not limited to *Sus scrofa*, *Canis lupus familiaris*, *Gallus gallus*, *Equus ferus caballus*, Aves (bird). A total of three screened sediment samples were collected within T-141 including one from Stratum II, one from Feature 1, and one from Feature 2. No bulk sediment samples were collected for sample analysis due to the presence of isolated human skeletal remains within T-141. Sample analysis supported the designation of the buried A-horizon (II) and associated features within T-141 as components of a subsurface cultural deposit (SIHP# -5820). SIHP# -5820, was also been identified within T-142, T-145, T-146A, T-150, T-151, and T-151A. A complete description of SIHP# -5820 is presented in Volume I.



T-141 general location (view to west).

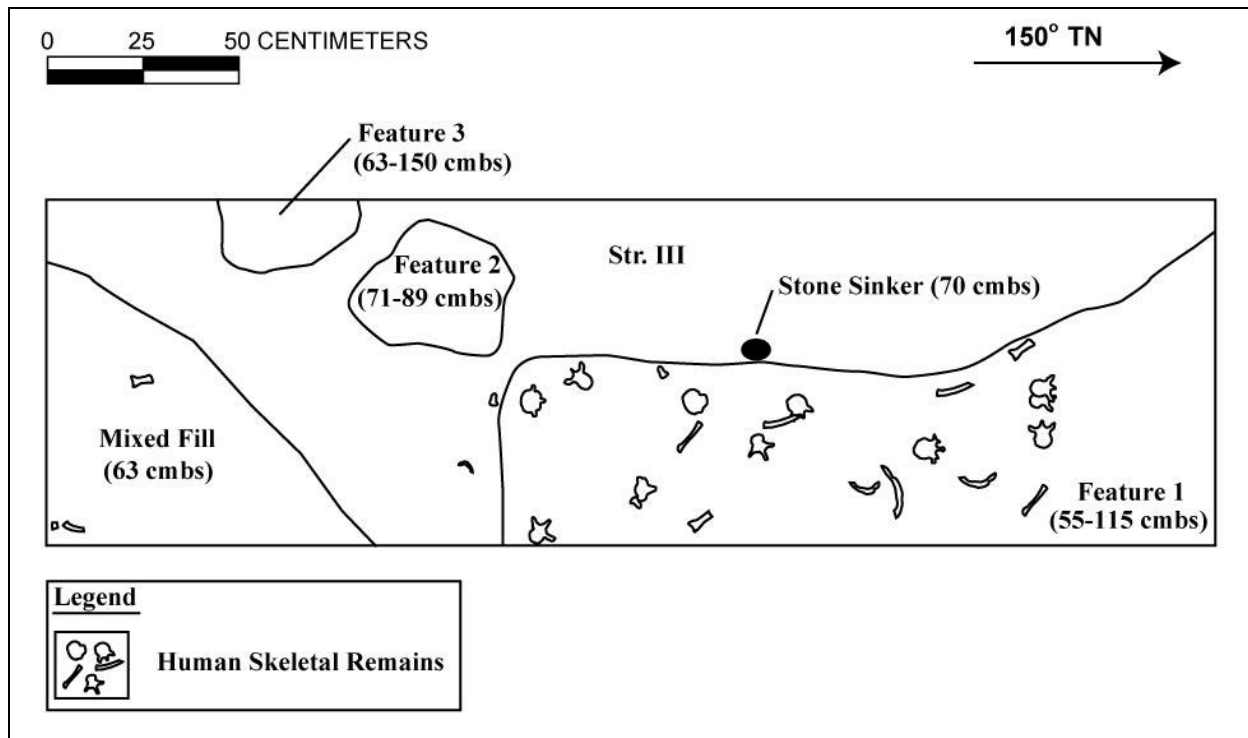




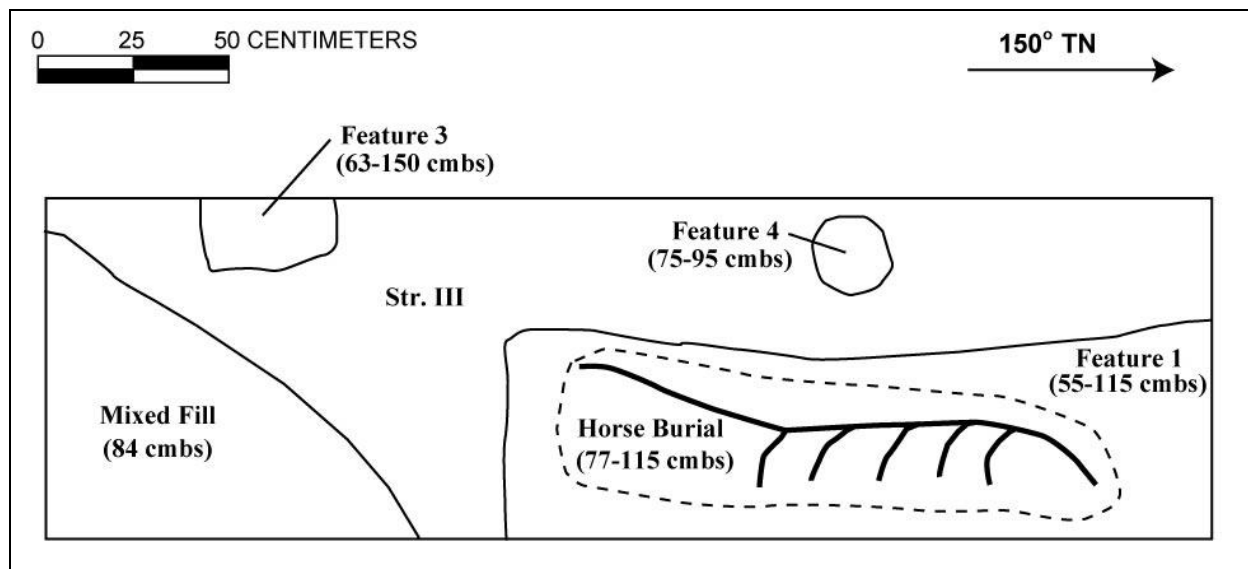
T-141 northeast profile wall showing SIHP# -5820 Feature 3 (at left) in sidewall



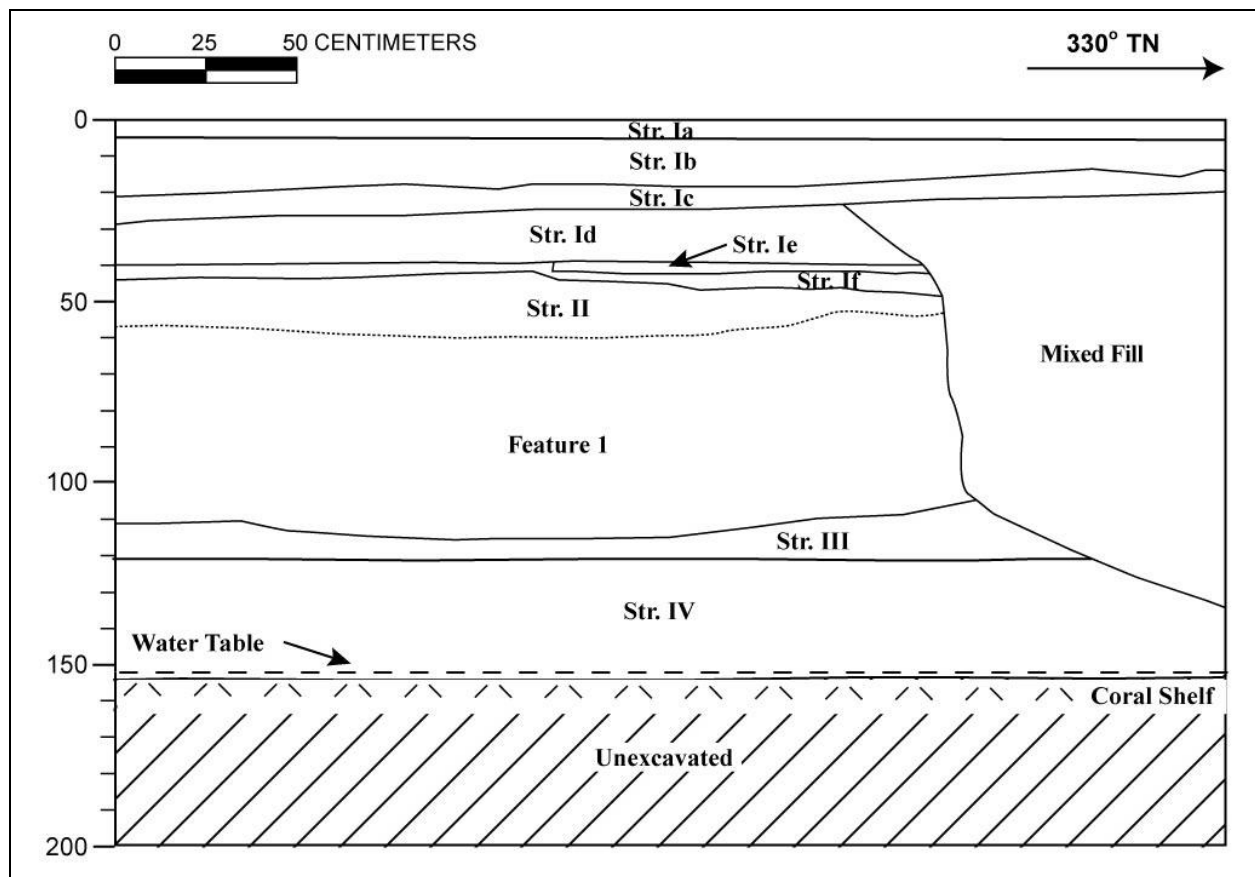
T-141 southwest profile wall.



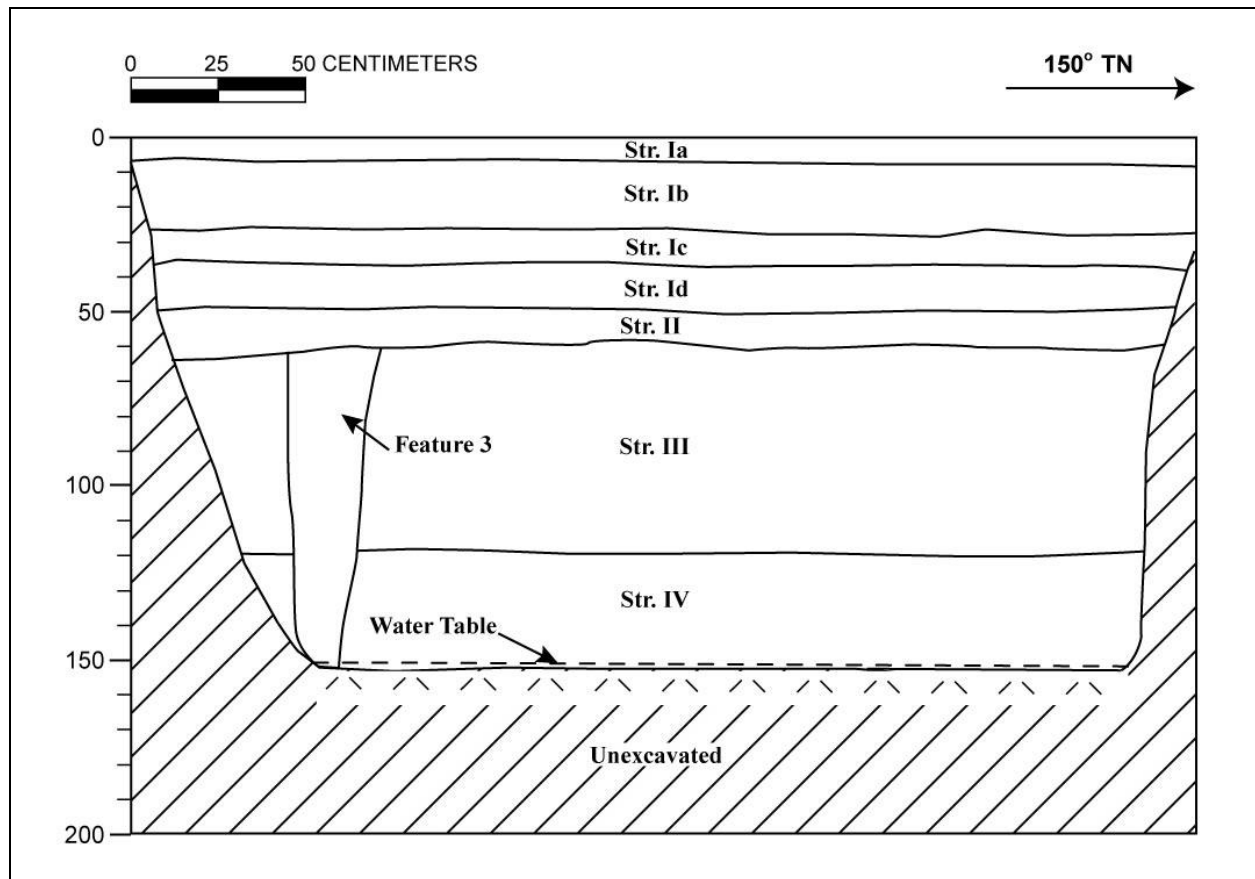
T-141 plan view near lower boundary of Stratum II



T-141 plan view at lower boundary of Stratum II



T-141 southwest wall profile



T-141 northeast wall profile showing SIHP# -5820 Feature 3

## T-141 Stratigraphic description of southwest wall

Stratum	Depth (cmbs)	Description
Ia	0-6	Asphalt
Ib	6-20	Fill; 2.5 YR 5/4 (reddish brown); very gravelly silt loam; weak, very fine, blocky structure; dry, weakly coherent consistency; non-plastic; terrigenous origin; abrupt, smooth lower boundary; imported basalt base course
Ic	15-30	Fill; 7.5 YR 3/2 (dark brown); sandy loam; weak, very fine, crumb structure; moist, firm consistency; non-plastic; mixed origin; clear, smooth lower boundary; fill material
Id	25-40	Fill; 2.5 Y 8/3 (pale yellow); extremely gravelly sand course; structureless, single-grain; moist, loose consistency; non-plastic; marine origin; abrupt, broken/discontinuous lower boundary; fill material
Ie	40-42	Fill; 10 YR 4/3 (brown); sandy loam; single-grain, weak, fine, crumb structure; moist, very friable consistency; slightly plastic; mixed origin; clear, broken/discontinuous lower boundary; fill material
If	40-48	Fill; 10 YR 5/6 (yellowish brown); sandy loam; fine, crumb structure; moist, very friable consistency; slightly plastic; mixed origin; clear, broken/discontinuous lower boundary; fill material
II	43-61	Natural, 10 YR 6/2 (light brownish gray); loamy sand; weak, very fine, crumb structure; moist, very friable consistency; slightly plastic; mixed origin; diffuse, broken/discontinuous lower boundary; buried A-horizon; former land surface
III	105-121	Natural; 10 YR 6/4 (light yellowish brown); very fine sand; structureless, single-grain; moist, loose consistency; non-plastic; marine origin; diffuse, smooth lower boundary; Jaucas sand
IV	121-152	Natural; 2.5 Y 8/4 (pale yellow); silty sand; structureless, single-grain; wet, non-sticky consistency; non-plastic; marine origin; lower boundary not visible; lagoonal sediment



## T-141 Stratigraphic Description, northeast wall

Stratum	Depth (cmbs)	Description
Ia	0-6	Asphalt
Ib	6-26	Fill; 2.5 YR 5/4 (reddish brown); very gravelly silt loam; weak, very fine, blocky structure; dry, weakly coherent consistency; non-plastic; terrigenous origin; abrupt, smooth lower boundary; imported basalt base course
Ic	26-36	Fill; 10 YR 8/2 (very pale brown); gravelly sand; structureless, single-grain; moist, loose consistency; non-plastic; abrupt, smoother lower boundary; crushed coral fill base course
Id	36-50	Fill; 7.5 YR 3/2 (dark brown); sandy loam; weak, very fine, crumb structure; moist, firm consistency; non-plastic; mixed origin; clear, smooth lower boundary; fill material
II	50-70	Natural, 10 YR 3/2 (very dark grayish brown); sandy clay; weak, fine, crumb structure; moist, friable consistency; slightly plastic; mixed origin; diffused lower boundary; buried A-horizon; former land surface
III	56-73	Natural; 10 YR 6/4 (light yellowish brown); very fine sand; structureless, single-grain; moist, loose consistency; non-plastic; marine origin; diffuse, smooth lower boundary; Jaucas sand
IV	73-152	Natural; 2.5 Y 8/4 (pale yellow); silty sand; structureless, single-grain; wet, non-sticky consistency; non-plastic; marine origin; lower boundary not visible; lagoonal sediment

T-141 Artifact Analysis Table.

Acc. # 141-A-	Prov.	Ceramic Vessel Type	Portion	No.	Paste; Decoration	Age; Origin	Comments
1	T-141, Fea. 5	Crock/ Jar	Base	1	Stoneware; Slip glaze		Brown glaze
2	T-141, Fea. 5	Flatware	Base	1	Porcelain		White; small square corner
3	T-141, Fea. 5	Hollowware - bowl	Base to body	1	Porcelain; Applique; painted overglaze	Asian	High foot; green on exterior, white in interior
4	T-141, Fea. 5	Dinnerware	Body	1	Porcelain; Transfer print	Asian	Blue waves; Asian pattern on interior and exterior
5	T-141, Fea. 5	Dinnerware	Rim	1	Earthenware, Refined; Applique; painted overglaze	Asian	Four Flowers motif, possibly
6	T-141, Fea. 5	Flatware	Base	1	Porcelain		
7	T-141, Fea. 5	Dinnerware	Rim	2	Earthenware, Refined		
Acc. # 141-A-	Prov.	Miscellaneous Type	Portion	No.	Material	Age; Origin	Description
8	T-141, St. Id	Brick	Fragment	1			Red color, machine-made
9	T-141, St. IIa, Fea. 1	Unknown	Fragment	1	Plastic		Disc-shaped
10	T-141, St. IIa, Fea. 1	Unknown	Fragment	1	Metal		Corroded tubular item
11	T-141, St. IIb, Fea. 5	Rock	Complete	1	Stone		Small rocks; dark brown, orange and gray in color



T-141 ceramic fragments (Acc. # 141-A-1 to A-7, shown left to right) – exterior - from Feature 5



T-141 ceramic fragments (Acc. # 141-A-1 to A-7, shown left to right) – interior - from Feature 5



T-141 basalt stone sinker (Acc. # 141-A-1)

## T-141 Terrestrial vertebrate material collected individually during excavation

Acc. #	Stratum	Depth (cmbs)	Feature	Family/Class	Species	Element	Description	Modification
141-F-1	II	45-58	5820-1	Suidae (pig)	<i>Sus scrofa</i>	Molar	Complete	None
141-F-2	II	45-58	5820-1	Canidae (dog)	<i>Canis lupus familiaris</i>	Vertebra (spinous process; Humerus (proximal section)	Fragments	None
141-F-3	II	45-58	5820-1	Aves (bird)	Unidentified	Diaphysis section	Fragment	None
141-F-4	II	77-115	5820-1	Equidae (horse)	<i>Equus ferus caballus</i>	Articulated Horse	Complete	None
141-F-5	II	89	5820-2	Suidae (pig)	<i>Sus scrofa</i>	Cranial	Fragment	None
141-F-6	Utility excavation	75-83	-	Suidae (pig)	<i>Sus scrofa</i>	Humerus portion; Phalanx	Fragment/Complete	Humerus butchered (cut with metal blade)
141-F-7	Utility excavation	75-83	-	Aves (chicken)	<i>Gallus gallus</i>	Left tibiotarsal (distal portion)	Fragment	None



### 3.37 Test Excavation 142 (T-142)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	982
<b>TMK#:</b>	2-1-051
<b>Elevation:</b>	1.48 m
<b>UTM:</b>	618389 mE, 2355850 mN
<b>Max Length / Width / Depth:</b>	6.7 m / 0.70 m / 1.43 m
<b>Orientation:</b>	320 / 140° TN
<b>Targeted Project Component:</b>	Utility relocation(Electric Manhole)
<b>USDA Soil Designation:</b>	Fill land (FL)

**Setting:** Test Excavation 142 (T-142) was located on property belonging to the City and County of Honolulu located near the northeast corner of Halekauwila and Keawe Street. Utilities within the vicinity included an electric line located approximately 1.0 m southwest, a water line approximately 1.1 m southwest, and a sewer line approximately 4.0 m north of T-142. The excavation area was on a sidewalk slightly elevated from Halekauwila Street.

**Summary of Background Research and Land Use:** T-142 was located in LCA 982, which is described as comprising 1 house lot (4 houses) awarded to Kukao. Many other LCAs were present immediate vicinity. The 1884 Bishop, Honolulu to Kewalo map depicted T-142 adjacent to wetlands. A structure is depicted within LCA 982, located approximately 30.0 m southeast of T-142. Additional structures are depicted on the 1887 Wall, Honolulu map in the vicinity of T-142 including one structure located approximately 23.0 m northeast of the excavation. The Immigration Depot is also depicted along the shoreline of Kaka'ako, approximately 450.0 m northwest of T-142. The 1897 Monsarrat, Honolulu map documents the early urbanization of the area surrounding T-142. Street grids and partitioned blocks are present immediately to the north of T-142. Coral Street is depicted extending to the beach road, which would become Ala Moana Boulevard. Halekauwila Street is not yet present at the location of T-142, but is depicted on the 1919 War Department map of Honolulu. The 1919 map also shows the expansion of urbanization in downtown Honolulu, which continues to present day.

A number of previous archaeological studies were conducted within the area of T-142. In 1991, a total of eight human burials (SIHP # 50-80-14-4380) were recorded near Coral and Queen Street (Douglas 1991 a and b). In 2000, CSH conducted archaeological monitoring at the Kaka'ako Improvement District 3 area, which included the location of T-142. A total of twenty human burials were encountered; nine burials (SIHP # 50-80-14-4380) were discovered at the Pohulani Elderly Rental Housing and eleven burials (SIHP # 50-80-14-5820) in and around Mother Waldron Park (Winieski and Hammatt 2000a). One of the burials identified within SIHP# -5820 is located approximately 16.0 m northwest of T-142. In 2009, CSH conducted an archaeological inventory survey in which material representing former marsh or pond sediment was encountered (O'Hare et al 2009). Similar results were reported during an archaeological assessment of the proposed Halekauwila Place Project (Tulchin et al 2009). An archaeological

inventory survey completed by CSH in 2011, identified historic building remnants (SIHP # 50-80-14-7124), an extensive layer of burnt historic debris (SIHP # 50-80-14-7189), old salt pan remnants (SIHP # 50-80-14-7190), and a subsurface cultural layer (SIHP # 50-80-14-7197) within the an adjacent parking lot on the opposite corner of Halekauwila Street and Kiawe Street as T-142 (Pammer et al. 2011).

**Documentation Limitations:** T-142 was excavated to a depth of 1.43 mbs and beneath the water table at 1.32 mbs. All of the natural sediment within T-142 was hand-excavated to beneath the water table. All sediment that was excavated from the immediate vicinity of Feature 30 (burial) was screened in an effort to identify any isolated human skeletal remains.

**Stratigraphic Summary:** T-142 consisted of fill strata overlying natural sediments to the water table. Observed strata included asphalt (Ia), very gravelly silty loam (Ib) and gravelly cobbly sand (Ic) overlying a previously disturbed sandy loam (II), natural very fine to fine sand (III), and sand (IV). An abandoned utility pit was encountered within T-142 extending from the base of Stratum Ib to the beneath the water table. The utility pit contained loose construction-grade gravel. A previously backfilled excavation was also observed within the south end of T-142 from 0.45 mbs to 0.90 mbs and contained a mix of sediment from Stratum II (buried A-horizon) and Stratum III (Jaucas sand). The previously backfilled excavation appeared to truncate Feature 5, but did not extend to or disturb Feature 30 (burial). The stratigraphy generally conformed to the USDA soil survey designation of Fill land (FL).

**Artifact Discussion:** Two traditional Hawaiian artifacts (Acc. # 142-A-1 to A-2) were collected from features associated with Stratum II. Artifacts consisted of a basalt game stone, and a marine shell fish hook that was found in Feature 6. Thirteen (13) fragments consisting of seven (7) historic artifacts (Acc. # 142-A-1 to A-7, see following table and photographs) were also collected including, nine ceramic fragments from four vessels from Stratum II, Feature 7, three glass fragments from two bottles from Stratum Ic, and one plastic item from Stratum Ic. No narrow date ranges for the artifacts could be determined.

**Feature Discussion:** A total of five features (Feature 5-8 and 30) were identified within T-142, extending from the base of the buried A-horizon (II). The buried A-horizon (II) has been designated as a component of SIHP# 50-80-14-5820, which has also been identified within T-141, T-145, T-146A, T-150, T-151, and T-151A. The five features within T-142 have been designated as Features 5-8 and 30 of SIHP# -5820. Features 1-4 of SIHP# -5820 were identified within T-141.

SIHP# -5820 Feature 5 appeared to be an irregular-shaped, truncated pit that was identified at the lower boundary of Stratum II, extending from 0.44 mbs to 0.75 mbs. The feature was observed in plan. The previously backfilled excavation that was observed within T-142 appeared to truncate Feature 5. Feature 5 was considered to be a pit of indeterminate function. A bulk sediment sample was collected for sample analysis, and the results are presented below.

SIHP# -5820 Feature 6 appeared to be an irregular-shaped pit that was identified at the lower boundary of Stratum II, extending from 0.56 to 0.75 mbs. The feature was observed in plan. Feature 6 was considered to be a pit of indeterminate function. A bulk sediment sample was collected for sample analysis, and the results are presented below.

SIHP# -5820 Feature 7 appeared to be an irregular-shaped pit that was identified at the lower boundary of Stratum II, extending from 0.50 mbs to 0.90 mbs. The feature was observed in plan and within both the southwest and northeast excavation sidewall. Feature 7 was considered to be a pit of indeterminate function.

SIHP# -5820 Feature 8 appeared to be a small, oval-shaped discoloration that was identified at the lower boundary of Stratum II, extending from 0.55 mbs to 0.70 mbs. The feature was observed in plan and within the southwest excavation sidewall. A bulk sediment sample was collected for sample analysis, and the results are presented below.

SIHP# -5820 Feature 30 was an *in situ* human burial with an associated irregular-shaped, faint pit that was indiscernible until hand-excavation was extended to a depth of 1.00 mbs. The pit associated within Feature 30 most likely extended from the lower boundary of the former A-horizon (II), but was truncated by a previously backfilled excavation that terminated at 0.90 mbs. Feature 8, which overlies the truncated pit of Feature 30 does not appear to be associated. At 1.00 mbs, the uppermost portions of a human burial were encountered within Feature 30. The burial was considered to be in situ and articulated within the flexed position. All of the sediment that was excavated from the immediate vicinity of Feature 30 was screened in an effort to identify any isolated human skeletal remains.

**Terrestrial Faunal Remains Collected During Excavation:** Faunal remains were collected individually during excavation from Stratum Ic: between 0.18 and 0.58 mbs, 0.24 and 0.42 mbs, and 0.44 and 0.7 mbs respectively; and Stratum IIa: between 0.44 and 0.52 mbs (SIHP# 50-80-14-5820, Feature 5), 0.52 and 0.6 mbs (SIHP# 50-80-14-5820, Feature 6), 0.5 and 0.6 mbs (SIHP# 50-80-14-5820, Feature 7), 0.69 mbs, and 0.7 mbs respectively.

The Stratum Ic faunal remains between 0.18 and 0.58 mbs consisted of: *Felis catus* and two types of unidentified Aves (bird) skeletal elements, with no evidence of cultural modification. The Stratum Ic faunal remains between 0.24 and 0.42 mbs consisted of: unmodified *Gallus gallus* skeletal elements. In addition to the Aves remains from Stratum Ic between 0.24 and 0.42 mbs, there were also unmodified unidentified spine and irregular Osteidhyes (fish) bone fragments recovered. The Stratum Ic faunal remains between 0.44 and 0.7 mbs consisted of: calcined *Bos taurus* skeletal elements; a calcined *Sus scrofa* fragment; unmodified juvenile *Felis catus* skeletal elements; irregular bone fragments from a medium mammal that showed butcher marks (from a non-metal blade) and calcination; and unmodified unidentified Aves (bird) skeletal fragments. The calcined *Bos taurus*, *Sus scrofa*, and medium mammal skeletal elements are indicative of exposure to extreme heat for an extended period of time which doubtfully would have occurred in a traditional Hawaiian context, it is more likely that this effect occurred in association with trash-burning activities which took place in this area in historic times.

The Stratum IIa faunal remains from SIHP# 50-80-14-5820, Feature 5 (between 0.44 and 0.52 mbs) consisted of: a burned/calcined *Bos taurus* rib fragment and an unmodified medium mammal (possible *Bos taurus* or *Sus scrofa*) cranial (possible) fragment. The calcined *Bos taurus* rib is indicative of exposure to extreme heat for an extended period of time which doubtfully would have occurred in a traditional Hawaiian context, it is more likely that this effect occurred in association with trash-burning activities which took place in this area in historic times. The Stratum IIa faunal remains from SIHP# 50-80-14-5820, Feature 6 (between 0.52 and 0.6 mbs) consisted of *Bos taurus* skeletal elements with butcher marks on the diaphysis sections (uniform

striations on both sides) and black charring/burnt areas on the cancellous diaphysis sections; consistent with traditional Hawaiian food processing methods. However, the presence of *Bos taurus* (an introduced species) places this feature in the post-Contact period. The Stratum IIa faunal remains from SIHP# 50-80-14-5820, Feature 7 (between 0.5 and 0.6 mbs) consisted of: *Bos taurus* skeletal elements, unmodified *Sus scrofa* skeletal elements, and unmodified medium mammal (possible *Bos taurus* or *Sus scrofa*) irregular bone fragments. The *Bos taurus* radius and vertebrae had been butchered with a metal blade, indicating an historic origin and not traditional Hawaiian.

Also within Stratum IIa, a *Canis lupus familiaris* diaphysis section with perimortem fractures was recovered at 0.69 mbs, and a *Bos taurus* rib fragment with butcher marks from a non-metal blade (striations on both sides and a single false start) was collected at 0.7 mbs. Again, the presence of *Bos taurus* (an introduced species) places this feature in the post-Contact period.

**Sample Results:** A total of five bulk sediment samples and one screened samples were collected from within T-142. All of the sediment samples were wet-screened.

A two-liter bulk sediment sample, collected from Stratum Ic between 0.24 and 0.42 mbs contained charcoal (0.6g), marine shell (18.1 g), an unidentified seed pod (0.1g), a glass bottle fragment (0.5g), a chicken (*Gallus gallus*) bone (15.2g), and an unidentified fish bone (0.1g).

A 1.5-liter bulk sediment sample, collected from Stratum II between 0.53 and 0.77 mbs, contained charcoal (0.4g), Neritidae *Nerita picea* (1.7g), crustacean (0.2g), Echinodermata *mathaei* sp. (0.2g), and naturally-deposited marine shell (1.6g).

A 15-liter bulk sediment sample, collected from Feature 5 between 0.44 and 0.75 mbs, contained charcoal (4.1g), possible marine shell midden (36.6g, see Feature 5 Midden Results Table located at the end of this section), naturally-deposited marine shell (0.3), a rounded vesicular basalt game stone (180.5g), earthenware fragments (23.2 g), rusted metal fragments (7.6g), an unidentified fish bone (0.1g), and fire-cracked vesicular basalt rocks and rock fragments (> 500.0 g). The basalt game stone from Feature 5 was sent for EDXRF analysis (see EDXRF discussion in Volume IV). Although specific source material was not available, the results indicated that the basalt game stone had a high ratio of Strontium to Zirconium. It does not match Oahu Island volcanic source samples.

A 2-liter bulk sediment sample, collected from Feature 6 between 0.56 and 0.64 mbs, contained charcoal, possible marine shell midden (226.3g, see Feature 6 Midden Results Table located at the end of this section), naturally-deposited marine shell (3.1 g), a shell fish hook (0.5g), rusted metal fragments (0.5g), a clear glass fragment (1.0g), an earthenware fragment (0.7g), angular basalt gravel (171.6g), water-worn basalt gravel (32.7g), unidentified medium mammal bones (17.9g), an unidentified fish bone (0.6g), a rat (*Rattus* sp.) bone (0.5g), and human skeletal remains.

A 50-liter screened sediment sample, collected from Feature 7 between 0.50 and 0.70 mbs, contained charcoal (2.1 g), possible marine shell midden (373.5 g, see Feature 7 Midden Results Table located at the end of this section), naturally-deposited marine shell (25.3 g), earthenware fragments (157.0 g), ceramic fragments (75.8 g), rusted metal fragments and debris (31.8 g), glass fragments (14.0 g), an unidentified bird (*Aves*) bone (0.9 g), an unidentified medium

mammal bone (1.0 g), unidentified burnt medium mammal bones (7.8 g), and a vesicular basalt stone (1.1 g).

A 0.25-liter bulk sediment sample, collected from Feature 8 between 0.55 and 0.70 mbs, contained charcoal (0.6g), Neritidae *Nerita picea* (7.4g), Turbinidae *Turbo* sp. (1.6), Echinodermata (0.6g), Mytilidae *Brachidontes crebristriatus* (0.4g), crustacean (0.3), naturally-deposited marine shell (3.7 g), a pig (*Sus scrofa*) bone (0.5g), an unidentified medium mammal bone (0.4g), an unidentified fish bone (0.1g), and an unidentified small mammal bone (0.1g). The charcoal that was collected from Feature 8 was submitted for wood taxa identification and radiocarbon analysis. Wood taxa analysis identified native and Polynesian-introduced trees including *Cocos nucifera* (Niu, coconut), *Aleurites moluccana* (Kukui), *Psyotria* sp. (Kopiko), and Monocot. Radiocarbon analysis yielded three possible date ranges, with a calibrated 2-sigma date of 1610 AD to 1670 AD (46.7%) being the most probable (see Radiocarbon Analysis located at the end of this section).

The results of the sample analysis indicated that Features 5-7 were deposited or disturbed during the post-Contact period as evidenced by the present of historic material within each feature. The absence of historic material combined with the presence of native or Polynesian-introduced wood taxa likely dating to 1610-1670 AD, indicates that Feature 8 was likely deposited during the pre-Contact period. The results of sample analysis support the identification of the buried A-horizon (II) and associated features (Feature 5-8, and 30) as components of a subsurface cultural deposit (SIHP# -5820).

**GPR Discussion:** A review of amplitude slice maps indicated no linear features which might indicate the presence of utilities. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.75 mbs.

GPR depth profiles for T-142 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.2 mbs. No utilities were observed in the profile. The maximum depth of clean signal return was approximately 1.3 mbs.

**Summary:** T-142 was excavated to a depth of 1.43 mbs and beneath the water table at 1.32 mbs. T-142 consisted of fill strata (Ia to Ic) overlying natural sediments (II to IV) to the water table. Two traditional Hawaiian artifacts (Acc. # 142-A-1 to A-2) were collected from features associated with Stratum II. Thirteen (13) fragments consisting of seven (7) historic artifacts (Acc. # 142-A-1 to A-7, see following table and photographs) were also collected. No narrow date ranges for the artifacts could be determined. A total of five features (Feature 5-8 and 30) were identified within T-142, extending from the base of the buried A-horizon (II) The five features within T-142 have been designated as Features 5-8 and 30 of SIHP# -5820. A total of five bulk sediment samples and one screened samples were collected from within T-142. All of the sediment samples were wet-screened. The results of the sample analysis indicated that Features 5-7 were deposited or disturbed during the post-Contact period as evidenced by the present of historic material within each feature. The absence of historic material combined with the presence of native or Polynesian-introduced wood taxa likely dating to 1610-1670 AD, indicates that Feature 8 was likely deposited during the pre-Contact period. The results of sample



analysis support the identification of the buried A-horizon (II) and associated features (Feature 5-8, and 30) as components of a subsurface cultural deposit (SIHP# -5820). A complete description of SIHP# -5820 is provided in Volume I.



T-142 general location (view to southeast).

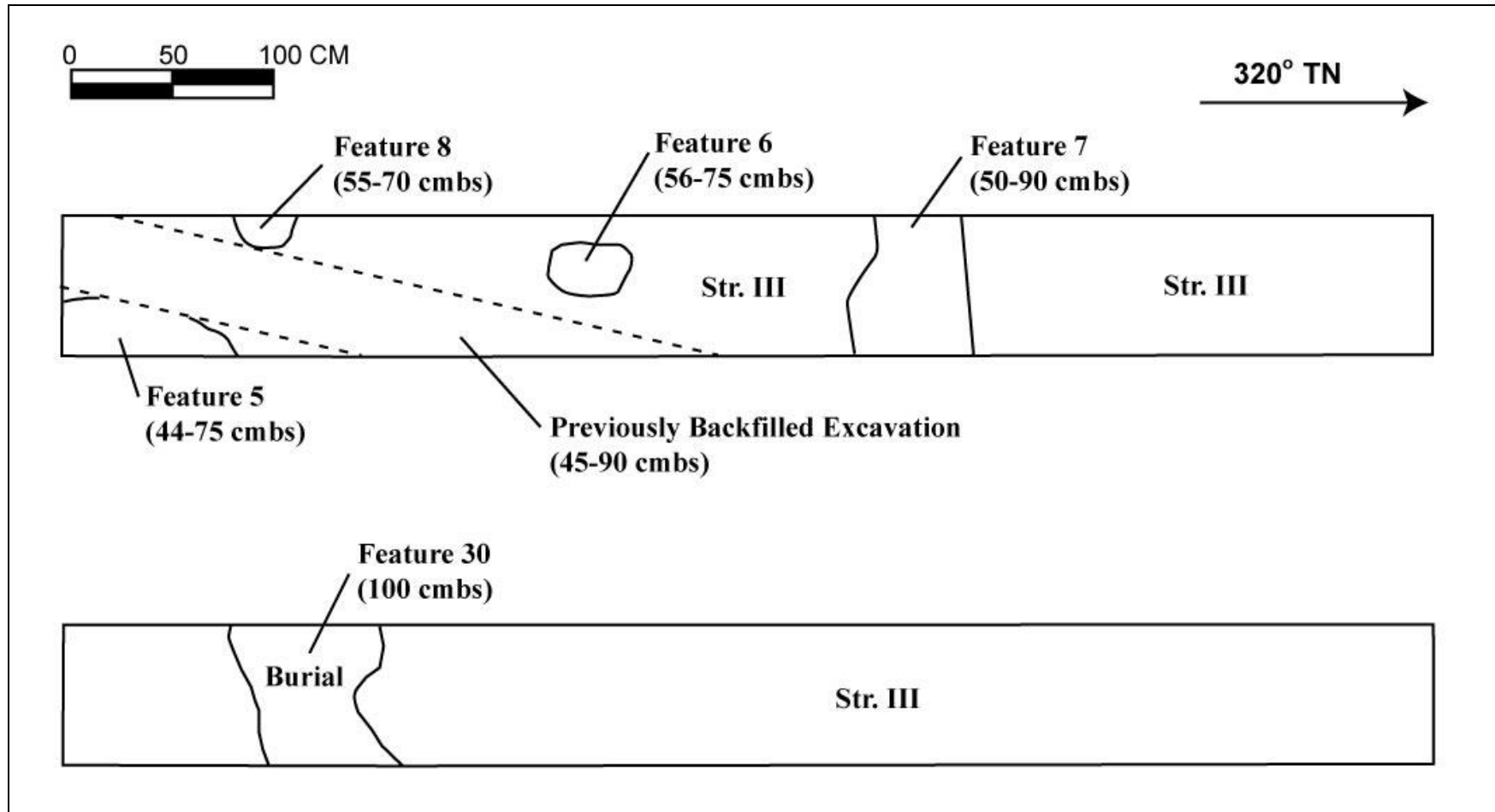


T-142 southwest wall profile (note: plywood used to cover location of Feature 30)

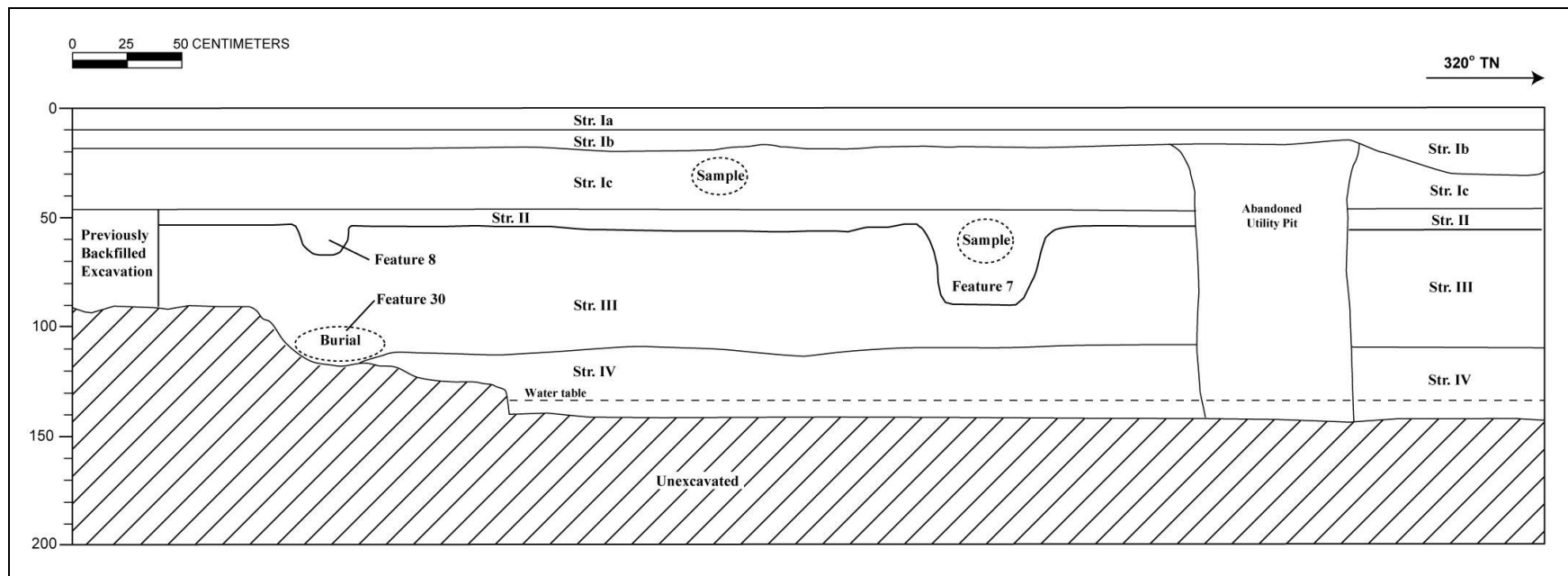




T-142 northeast profile (note: plywood used to cover location of Feature 30)



T-142 plan view



T-142 southwest wall profile

## T-142 Stratigraphic Description

Stratum	Depth (cmbs)	Description
Ia	0-10	Asphalt
Ib	10-30	Fill; 2.5 YR 2.5/4 (dark reddish brown); very gravelly silty loam; structureless, single-grain; moist, loose consistency; non-plastic; terrigenous origin; abrupt smooth lower boundary; gravel base coarse
Ic	18-54	Fill; 2.5 YR 8/3 (pale yellow); gravelly cobbly sand; structureless, single-grain; moist, loose consistency; non-plastic; marine origin; abrupt, smooth lower boundary; contained faunal bone within 2 pit features, non-diagnostic ceramic fragments; cultural material collected in both features, crushed coral
II	47-90	Natural; 10 YR 4/2 (dark grayish brown); sandy loam; weak, fine, crumb structure; moist, very friable consistency; mixed origin; abrupt smooth lower boundary; contained multiple historic: glass, ceramics, faunal bone, marine shell, tar vine from possible old road way; mixed use of A-horizon, top portion historically used and impacted. Bottom more pre-contact/Hawaiian land use
III	60-115	Natural; 10 YR 8/6 (yellow); very fine to fine grained sand; structureless single-grain; moist, loose consistency; non-plastic; marine origin; diffuse lower boundary; human burial encountered, multiple pit features intruding into layer
IV	110-143	Natural; 10 YR 8/4 (very pale brown); sand; structureless single-grain; moist, loose consistency; non-plastic; marine origin; diffuse lower boundary; common fine roots; increasing clay content toward the base



T-142 Artifact Analysis Table

Acc. # 142-A-	Prov.	Ceramic Vessel Type	Portion	No.	Paste; Decor.	Origin; Age	Comments
1	T-142, IIa, Fea. 5	Flatware	Body (2; base (2)	4	Earthenware, Refined		
2	T-142, IIa, Fea. 5	Dinnerware	Rim	1	Porcelain; Transfer- print		Blue geometric on exterior
3	T-142, IIa, Fea. 5	Dinnerware	Rim	1	Earthenware, Refined		Molded blue rim
Acc. # 142-A-	Prov.	Glass Bottle Type	Portion	No.	Color	Origin; Age	Comments
4	T-142, IIa, Fea. 5	Bottle	Base & body	3	Stoneware		8.9 (D)
5	T-142, St. Ic	Bottle	Body	1	Green		
6	T-142, St. Ic	Bottle	Base/ body	2	Clear	1870s- post	
Acc. # 142-A-	Prov.	Misc. Type	Portion	No.	Material.	Origin; Age	Comments
7	T-142, St. Ic	Unknown	Fragment	1	Plastic		



T-142 ceramic fragments (Acc. # 142-A-1 to A-3) - exterior - from Stratum IIa, Feature 5



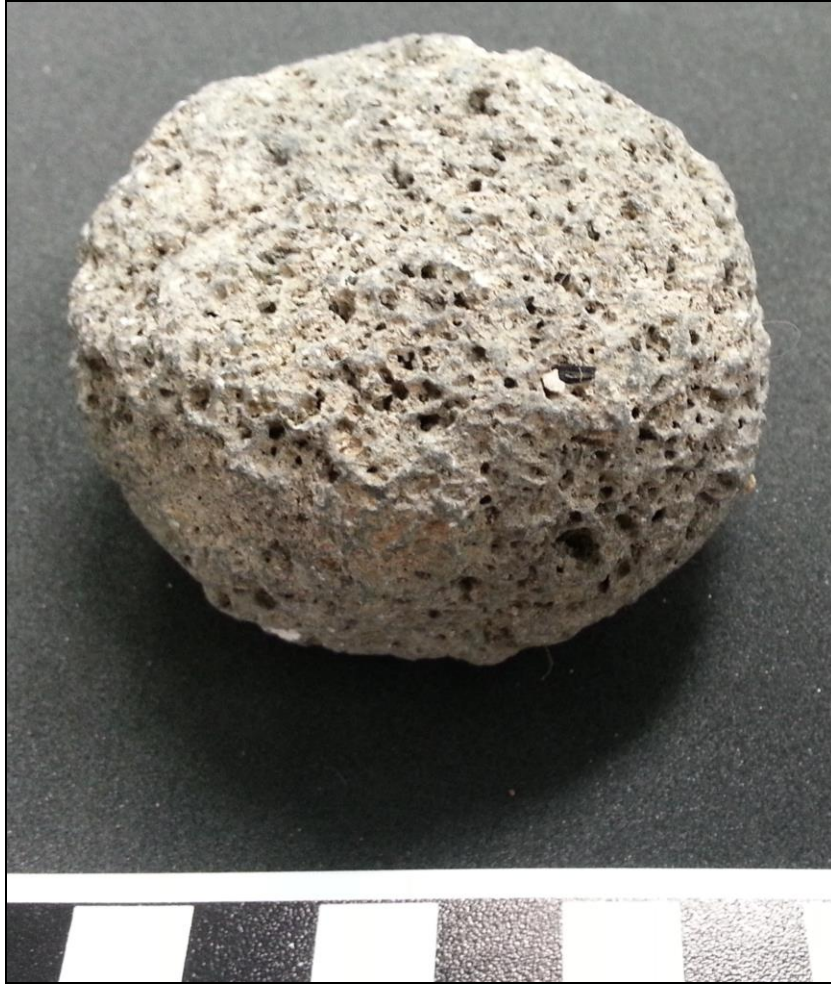
T-142 ceramic fragments (Acc. # 142-A-1 to A-3) – interior - from Stratum IIa, Feature 5



T-142 stoneware bottle fragments (Acc. # 142-A-4) from Stratum IIa, Feature 5



T-142 glass bottle fragments (Acc. # 142-A-5 to A-6) from Stratum IIa, Feature 5



T-142 basalt game stone (Acc. # 142-A-1)



T-142 marine shell fish hool (Acc. # 142-A-2)

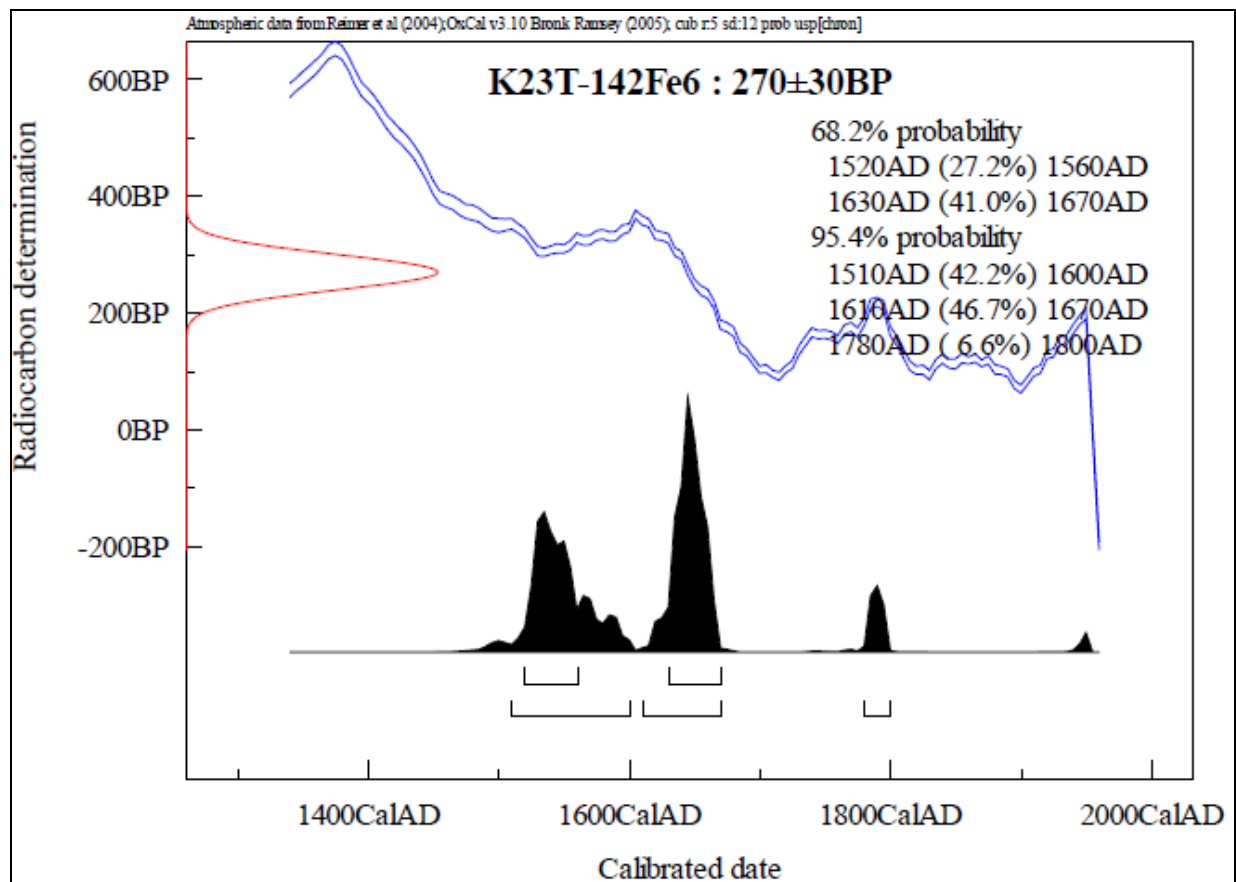
## T-142 Midden Table for Samples collected from Feature 5

SIHP #	Stratum	Feature	Depth (mbs)	Midden Type	Weight (g)
-5820	II	5	0.44-0.75	Neritidae <i>Nerita picea</i> / <i>Theodoxus neglectus</i>	11.2
				Nassariidae <i>Nassarius gaudiosus</i>	1.0
				Turbinidae <i>Turbo sandwicensis</i>	17.2
				Burned shell	4.4
				Tellinidae <i>Tellina palatam</i>	0.5
				Isognomidae <i>Isognomon sp.</i>	0.2
				Neritidae <i>Nerita picea</i> (3 opercula)	1.7
				Echinodermata <i>mathaei sp.</i>	0.3
				Crustacean	0.1

T-142 Midden Results Table

SIHP #	Stratum	Feature	Depth (mbs)	Midden Type	Weight (g)
-5820	II	6	0.56-0.64	Isognomidae <i>Isognomon</i> sp.	157.2
				Neritidae <i>Nerita picea</i>	21.7
				Echinodermata spp.– peak, tests, spines	18.7
				Conidae <i>Conus</i> sp.	17.4
				Neritidae <i>Theodoxus neglectus</i>	8.8
				Mytilidae <i>Brachidontes crebristriatus</i>	1.6
				Crustacean	0.9
-5820	II	7	0.50-0.70	Isognomidae <i>Isognomon</i> sp.	281.6
				Neritidae <i>Nerita picea</i>	46.9
				Neritidae <i>Nerita operculum</i>	0.1
				Conidae <i>Conus</i> sp.	11.0
				Echinodermata <i>diadema</i> sp./ <i>mathaei</i> sp.	10.6
				Echinodermata	0.2
				Tellinidae <i>Tellina palatam</i> with fused rusted metal	4.7
				Mytilidae <i>Brachidontes crebristriatus</i>	3.4
				Burned shell	2.1
				Ostreidae <i>Ostrea sandwicensis</i>	2.0
				Turbinidae <i>Turbo sandwicensis</i>	2.8
				Burned crustacean	0.7





T-142 Radiocarbon Results (Feature 8)

## T-142 Terrestrial vertebrate material collected individually during excavation

Acc. #	Stratum	Depth (cmbs)	Feature	Family/ Class	Species	Element	Description	Modification
142-F-1	Ic	18-50	-	Felidae (cat)	<i>Felis catus</i>	Lumbar vertebrae	Complete	None
142-F-2	Ic	18-50	-	Aves (bird)	Unidentified	Ribs; Proximal phalanx; 3rd phalanx	Fragments/ complete	None
142-F-3	Ic	18-50	-	Aves (bird)	Unidentified	Left and right tibiotarsus; Sternum/keel	Fragments	None
142-F-4	Ic	24-42	-	Aves (chicken)	<i>Gallus gallus</i>	Right femur; Left femoral condyle; Cranium; Ribs (possible); Sternum (possible); Irregular bones	Fragments	None
142-F-5	Ic	44-70	modern pit	Bovidae (cow)	<i>Bos taurus</i>	Mandible portion with teeth (2); Astragalus (foot bone); Talus; Vertebra (possible); Rib; Cranial (possible)	Fragments/ complete	All calcined
142-F-6	Ic	44-70	modern pit	Suidae (pig)	<i>Sus scrofa</i>	Proximal femur shaft portion, with unfused end for head	Fragment	Calcined
142-F-7	Ic	44-70	modern pit	Felidae (cat)	<i>Felis catus</i> (Juvenile)	Maxilla with molars (2) and canine (incomplete roots); Distal femur portion; Radial portion (possible <i>Felis catus</i> )	Fragments	None
142-F-8	Ic	44-70	modern pit	Mammalia	Medium mammal	Irregular bones	Fragments	Butcher marks/ calcination

Acc. #	Stratum	Depth (cmbs)	Feature	Family/ Class	Species	Element	Description	Modification
142-F-9	Ic	44-70	modern pit	Aves (bird)	Unidentified	Possible foot elements (thin and lightweight)	Fragments	None
142-F-10	IIa	44-52	5820-5	Bovidae (cow)	<i>Bos taurus</i>	Rib	Fragment	Burned/calcined (deformed from high temperature fire)
142-F-11	IIa	44-52	5820-5	Mammalia	Medium mammal (possible <i>Bos taurus</i> or <i>Sus scrofa</i> )	Cranial (possible)	Fragment	None
142-F-12	IIa	50-60	5820-7	Bovidae (cow)	<i>Bos taurus</i>	Radial proximal portion (possible); Lumbar vertebrae; Ribs; Irregular bones; 2nd and 3rd Carpus	Fragments	Radius and vertebrae butchered (cut with metal blade)
142-F-13	IIa	50-60	5820-7	Suidae (pig)	<i>Sus scrofa</i>	Occipital/basilar condyle; Right styloid portion; Cranial (possible)	Fragments	None
142-F-14	IIa	50-60	5820-7	Mammalia	Medium mammal (possible <i>Bos taurus</i> or <i>Sus scrofa</i> )	Irregular bones	Fragments	None

Acc. #	Stratum	Depth (cmbs)	Feature	Family/ Class	Species	Element	Description	Modification
142-F-15	Ila	52-60	5820-6	Bovidae (cow)	<i>Bos taurus</i>	Diaphysis section (possible tibia); Cancellous diaphysis sections	Fragments	Butcher marks on diaphysis sections(uniform striations on both sides); Black charring/burnt areas on cancellous diaphysis sections
142-F-16	Ila	69	-	Canidae (dog)	<i>Canis lupus familiaris</i>	Diaphysis section	Fragment	Perimortem fractures
142-F-17	Ila	70	-	Bovidae (cow)	<i>Bos taurus</i>	Rib	Fragment	Butcher marks (striations both sides, a single false start)

### 3.38 Test Excavation 143 (T-143)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	7712.6
<b>TMK#:</b>	2-1-051
<b>Elevation Above Sea Level:</b>	1.42 m
<b>UTM:</b>	618391mE, 2355835mN
<b>Max Length/Width/Depth:</b>	3.13 m / 0.90 m / 1.40 m
<b>Orientation:</b>	316 / 136° TN
<b>Targeted Project Component:</b>	Guideway Column
<b>USDA Soil Designation:</b>	Fill land (FL)

**Setting:** Test Excavation 143 (T-143) was located in the northwest-bound lane of Halekauwila Street approximately 50.0 m northeast the Keawe Street intersection. T-143 was located on property owned by the City and County of Honolulu.

**Summary of Background Research and Land Use:** The 1884 Bishop Honolulu map indicated T-143 was located within LCA 7716.6, awarded to Puunui. T-143 was also located adjacent to the southwestern border of LVA 982, award to Kukao. A structure was present within LCA 982, located approximately 22.0 m southeast of T-143. Two structures are depicted in the vicinity of T-143 within the 1887 Wall map of Honolulu, with the nearest being approximately 36.0 m to the northwest. The 1897 Monsarrat map of Honolulu depicts the early urbanization of the Kaka'ako area. Coral Street and an early alignment of Kiawe Street are depicted in the general vicinity of T-143. The 1919 War Department map of Honolulu depicts urban expansion throughout Honolulu. The present-day street grid and city block structure has been established, with T-143 being located within Halekauwila Street.

A number of previous archaeological studies conducted within the area of T-143. In 1991, a total of eight human burials (SIHP # 50-80-14-4380) were recorded near Coral and Queen Street (Douglas 1991 a and b). In 2000, CSH conducted archaeological monitoring at the Kaka'ako Improvement District 3 area, which included the location of T-143. A total of twenty human burials were encountered; nine burials (SIHP # 50-80-14-4380) were discovered at the Pohulani Elderly Rental Housing and eleven burials (SIHP # 50-80-14-5820) in and around Mother Waldron Park (Winieski and Hammatt 2000a). Three of the burials identified within SIHP# - 5820 are located in close proximity to T-143 including one burial located 31.0 m north and two burials located 60.0 m north of the excavation. In 2009, CSH conducted an archaeological inventory survey in which material representing former marsh or pond sediment was encountered (O'Hare et al 2009). Similar results were reported during an archaeological assessment of the proposed Halekauwila Place Project (Tulchin et al 2009). An archaeological inventory survey completed by CSH in 2011, identified historic building remnants (SIHP # 50-80-14-7124), an extensive layer of burnt historic debris (SIHP # 50-80-14-7189), old salt pan remnants (SIHP # 50-80-14-7190), and a subsurface cultural layer (SIHP # 50-80-14-7197) within an adjacent

parking lot on the corner of Halekauwila Street and Kiawe Street near T-143 (Pammer et al. 2011).

**Documentation Limitations:** T-143 was excavated to the coral shelf at a depth of 1.40 mbs and below the water table at 1.25 mbs. No specific factors limited the excavation of T-143.

**Stratigraphic Summary:** The stratigraphy of T-143 consisted of multiple fill strata overlying natural sediment. Observed strata included asphalt (Ia), very gravelly loam (Ib), gravelly sand fill (Ic), clay loam fill (Id), and sandy clay fill (Ie) overlying previously disturbed natural sandy clay (II). The stratigraphy generally conformed to the USDA soil survey designation of Fill land (FL).

**Artifacts Discussion:** A total of 106 historic artifacts (Acc. # 143-A-1 to A-55, see following table and photographs), were collected from T-143, consisting of 38 ceramic fragments (minimum of 29 vessels), 44 glass bottle/bottle fragments (minimum of 12 bottles), and 54 miscellaneous artifacts were collected from Stratum Id. The ceramics were a mixture of English and Asian ceramics. Two English-made plates were dated from the 1870s to the 1890s. Three bottles could be dated only to the post 1870s period. A brick possibly dates to ca 1918-1978. The historic artifacts collected from Stratum Id date to the late nineteenth to early twentieth century.

**Features Discussion:** No features were observed.

**Terrestrial Faunal Remains Collected During Excavation:** Faunal remains were collected individually during excavation from Stratum Id (between 0.6 and 0.8 mbs), the Stratum Id/II interface (at 0.98 and 1 mbs) and Stratum III (at 1.44 mbs). The Stratum Id faunal remains were collected from a concentration and consisted of: *Bos taurus* skeletal elements which had been butchered with a metal blade (indicating an historic and not traditional Hawaiian origin), as well as unmodified *Canis lupus familiaris* (possible) and other medium mammal skeletal elements.

The Stratum Id/II interface faunal remains from 0.98 mbs consisted of a single *Bos taurus* fragment which had been butchered on both ends with a metal blade, indicating an historic and not traditional Hawaiian origin. The Stratum Id/II interface faunal remains from 1 mbs consisted of unmodified *Bos taurus*, *Sus scrofa*, and unidentified Aves (bird) skeletal elements.

The Stratum III faunal remains consisted of *Capra aegagrus hircus* skeletal elements, some of which (frontal bone/horn) had burn marks. The presence of introduced species (*Capra aegagrus hircus* in Stratum III and *Bos taurus* in upper strata) places all of these strata within the post-Contact period.

**Sample Results:** A total of four bulk sediment samples were collected from within T-143 including one from Stratum Id, one from Stratum Ie, and two from Stratum II. All of the sediment samples were wet-screened.

A bulk sample from Stratum Id (0.59-0.80 mbs) yielded charcoal (50.4 g), midden [(3.0 g) consisting of Echinodermata (1.7 g) and *Nerita picea* (1.3 g)], rusted metal fragments (163.5 g), bottle glass (29.7 g), ceramic (2.9 g), 4-hole bone buttons (1.0 g) medium mammal (16.5 g), *Canis lupus familiaris* (3.8 g), fish (2.9 g), sandstone fragment (7.1 g).

A bulk sample from Stratum Ie (0.95 mbs) yielded charcoal (0.5 g), midden [(6.1 g) consisting of *Nerita picea* (4.4 g) and Echinodermata *diadema sp./mathaei sp.* (1.7 g)], rusted metal (21.5 g), glass (4.8 g), medium mammal (5.8 g), and fish (0.2 g)



Two bulk samples from Stratum II (1.05-1.25 mbs) yielded charcoal (0.6 g), Neritidae *Nerita picea* (5.7 g), Strombidae *Strombus* sp. (3.4 g), Mytilidae *Brachidontes crebristriatus* (2.0 g), Echinodermata *mathaei* sp. (0.3 g), Tellinidae *Tellina* sp. (0.2 g), Burned crustacean (0.1 g), unidentified burned shell (0.4 g), naturally deposited shell (3.4 g), *Ruppia maritima* seeds (0.9 g), wood (0.9 g), unburned *kukui* (0.5 g), glass (0.4), fish (0.1 g), burned rat tooth (0.1 g).

The results of sample analysis support the determination of Stratum Id and Ie as fill deposits that contained cultural material including historic artifacts. The presence of a glass fragments, burned marine shell, and a burned rat tooth within Stratum II indicate the stratum has been previously disturbed by post-Contact land use and/or fill deposition.

**GPR Discussion:** A review of amplitude slice maps indicated a linear feature but it was not encountered during excavation. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.75 mbs.

GPR depth profiles for T-143 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.25 mbs. An anomaly was observed in the profile but not within the excavation boundaries. The maximum depth of clean signal return was approximately 0.8 mbs.

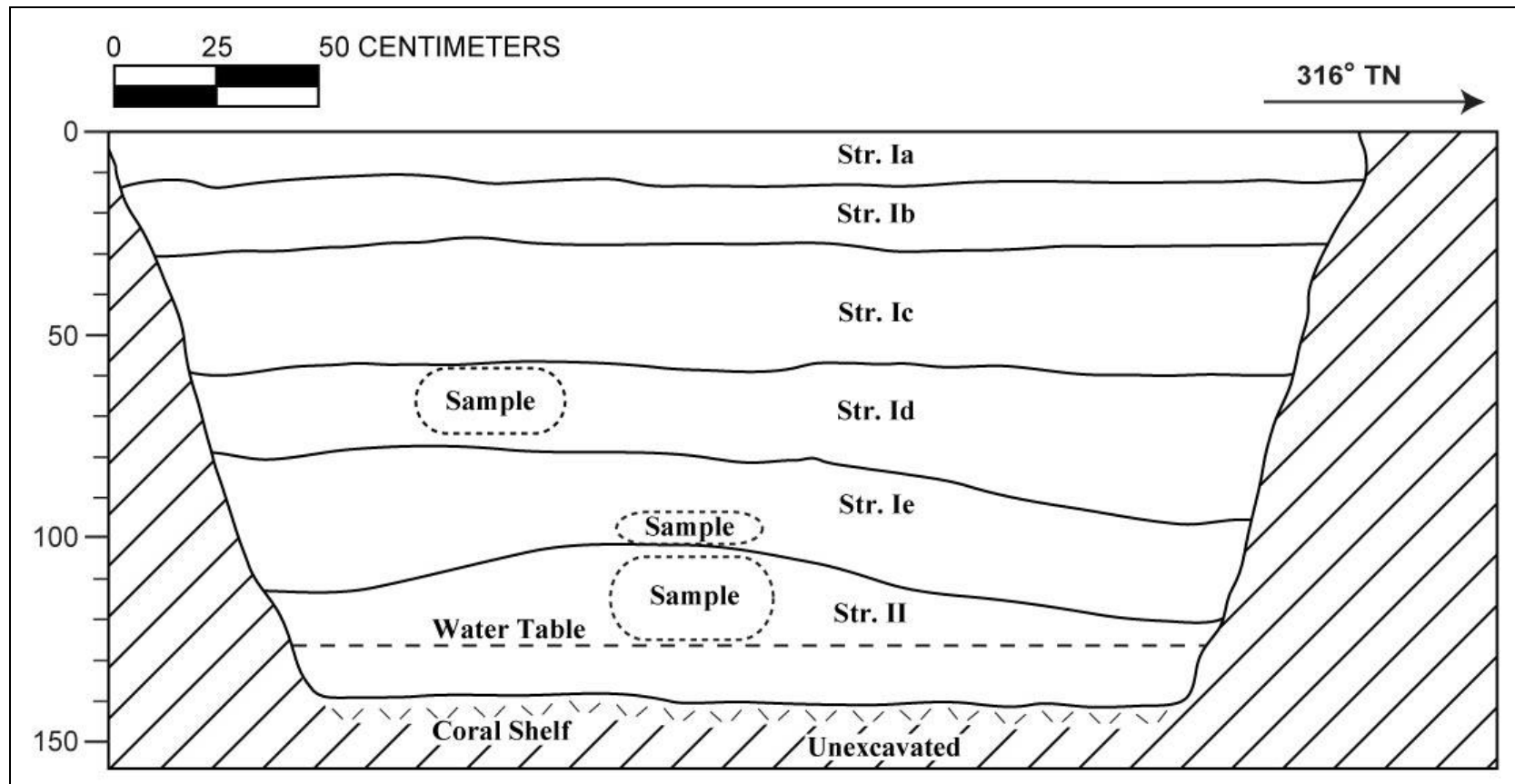
**Summary:** T-143 was excavated to the coral shelf at a depth of 1.40 mbs and below the water table at 1.25 mbs. The stratigraphy of T-143 consisted of multiple fill strata (Ia to Ie) overlying natural sediment (II). The stratigraphy generally conformed to the USDA soil survey designation of Fill land (FL). A total of 106 historic artifacts were collected from Stratum Id within T-143. The historic artifacts collected from Stratum Id date to the late nineteenth to early twentieth century. A total of four bulk sediment samples were collected from within T-143 including one from Stratum Id, one from Stratum Ie, and two from Stratum II. All of the sediment samples were wet-screened. The results of sample analysis support the determination of Stratum Id and Ie as fill deposits that contained cultural material including historic artifacts. The presence of a glass fragments, burned marine shell, and a burned rat tooth within Stratum II indicate the stratum has been previously disturbed by post-Contact land use and/or fill deposition. No cultural resources were identified within T-143



T-143 general location, view to southeast



T-143 southwest profile wall



T-143 southwest wall profile

## T-143 Stratigraphic Profile

Stratum	Depth (cmbs)	Description
Ia	0-12	Asphalt
Ib	12-30	Fill; 10 YR 5/1 (gray); very gravelly loam; structureless, single-grain; dry, loose consistency; non-plastic; terrigenous origin; abrupt smooth lower boundary; base coarse gravel
Ic	30-60	Fill; 10 YR 8/2 (very pale brown); gravelly sand; coarse, granular structure; dry, loose consistency; non-plastic; marine origin; abrupt smooth lower boundary; crushed coral fill
Id	56-94	Fill; 10 YR 2/2 (very dark brown); clay loam; moderate, medium crumb structure; moist, very friable, weak consistency; slightly plastic; mixed origin; diffuse, smooth lower boundary; contained faunal, ceramic, bottle glass, brick, pottery
Ie	73-120	Fill; 5 Y 6/1 (gray); sandy clay; structureless, massive; moist, very friable consistency; slightly plastic; mixed origin; diffuse, smooth lower boundary; sandy clay
II	103-140	Natural; GLEY 1 5/5GY (greenish gray); sandy clay; weak, fine, blocky structure; moist, very friable consistency; plastic; mixed origin; lower boundary not visible; contained mollusk shells; previously disturbed natural sediment

T-143 Artifact Analysis Table.

Acc. # 143- A-	Prov.	Ceramic Vessel Type	Portion	No.	Paste; Decor.	Origin; Age	Comments
1	T-143, St. Id, Fea 1, 0.60- 0.80 mbs	Hollowware - bowl	Base	1	Porcelain	Asian	High foot; floral design
2	T-143, St. Id, Fea 1, 0.60- 0.80 mbs	Dinnerware	Body	1	Porcelain; Transfer- print		Blue transfer-print - floral
3	T-143, St. Id, Fea 1, 0.60- 0.80 mbs	Flatware	Rim	1	Porcelain Painted underglaze		One interior red band
4	T-143, St. Id, Fea 1, 0.60- 0.80 mbs	Dinnerware	Rim	1	Earthenware, Refined; Painted underglaze		One exterior red band; Red flowers, red, green leaves
5	T-143, St. Id, Fea 1, 0.60 mbs	Unknown	Body to rim	1	Earthenware Slip glaze		Possibly not a vessel; Lid? Knob?
6	T-143, St. Id, Fea 1, 0.58- 0.66 mbs	Dinnerware	Rim	1	Earthenware, Refined		
7	T-143, St. Id, Fea 1, 0.58- 0.66 mbs	Dinnerware	Body	1	Earthenware, Refined; Painted underglaze		1 green stem showing
8	T-143, St. Id, Fea. 1, 0.60- 0.66 mbs	Dinnerware	Body	1	Stoneware		Brown slip glaze
9	T-143, St. Id, Fea. 1, 0.60- 0.66 mbs	Hollowware	Body	2	Earthenware		Brown slip glaze
10	T-143, St. Id, Fea. 1, 0.60- 0.66 mbs	Dinnerware	Body	1	Porcelain		White
11	T-143, St. Id, Fea. 1, 0.60- 0.66 mbs	Dinnerware	Body	1	Porcelain		White
12	T-143, St. Id, Fea. 1, 0.60- 0.66 mbs	Hollowware	Body	2	Earthenware		Brown slip glaze
13	T-143, St. Id, Fea. 1, 0.60- 0.66 mbs	Dinnerware	Rim	3	Earthenware		dark brown dots over brown glaze), spattered
14	T-143, St. Id, Fea. 1, 0.60- 0.66 mbs	Crock	Body (7); base (2)	9	Stoneware		10.7 (D)
15	T-143, St. Id/II, Fea. 1, 0.98 mbs	Hollowware - bowl	Base to Rim	1	Porcelain; Transfer- print	Asian	Asian rice bowl; Three Friends motif; pendant rim pattern

Acc. # 143- A-	Prov.	Ceramic Vessel Type	Portion	No.	Paste; Decor.	Origin; Age	Comments
16	T-143, St. Id/II, Fea. 1, 0.98 mbs	Dinnerware	Rim	1	Porcelain; Transfer print	Asian	Dashed lines; Blue pendant rim pattern
17	T-143, St. Id/II, Fea. 1, 0.98 mbs	Dinnerware	Body	1	Porcelain		White
18	T-143, St. Id/II, Fea. 1, 0.98 mbs	Dinnerware	Rim	2	Earthenware, Refined		
19	T-143, St. Id-II, Fea 1, 1.0 cbms	Flatware - plate	Base to rim	1	Earthenware, Refined	English; 1870- 1890	T. Furnival & Sons, England base mark".
20	T-143, St. Id-II, Fea 1, 1.0 cbms	Dinnerware	Base to rim	1	Porcelain; Painted underglaze		2 bands with geometric dotting between; Wavy interior blue band on rim
21	T-143, St. Id-II, Fea 1, 1.0 cbms	Flatware - plate	Base to body	1	Earthenware, Refined (Ironstone)	English, 1873- 1891	George Jones & Sons, England base mark
22	T-143, St. Id-II, Fea 1, 1.0 cbms	Hollowware - bowl	Base to body	1	Porcelain; Painted underglaze	Asian	Soy sauce dish? Dots
23	T-143, St. Id-II, Fea 1, 1.0 cbms	Dinnerware	Base to body	1	Porcelain; Painted underglaze	Asian	Red flower, brown stems; red Asian printed character on base
24	T-143, St. Id-II, Fea 1, 1.0 cbms	Hollowware	Base to rim	1	Incised, painted underglaze	Asian	Floral pattern on both sides
25	T-143, St. Id-II, Fea 1, 1.0 cbms	Hollowware - bowl	Base to rim	1	Porcelain; Painted underglaze	Asian	gray , flower & stems; flowers raised
26	T-143, St. Id-II, Fea 1, 1.0 cbms	Dinnerware	Body to rim	2	Porcelain; Painted underglaze		Interior and exterior blue flowers
27	T-143, St. Id-II, Fea 1, 1.0 cbms	Hollowware - bowl	Rim	2	Porcelain; Painted underglaze	Asian	Asian rice bowl; Bamboo motif
28	T-143, St. Id-II, Fea 1, 1.05 mbs	Flatware - plate	Base to rim	1	Porcelain; Sponge underglaze	English, 1873- 1891)	"George Jones & Sons, England – base mark



Acc. # 143-A-	Prov.	Glass Bottle Type	Portion	No.	Paste; Decor.	Origin; Age	Comments
29	T-143, St. Id, 0.58-0.66 mbs	Bottle	Base	1	Clear	1870s- post	
30	T-143, St. Id, 0.58-0.66 mbs	Bottle	Base	1	Clear	1870s- post	
31	T-143, St. Id, 0.58-0.66 mbs	Bottle	Body	11	Amber		
32	T-143, St. Id, 0.58-0.66 mbs	Bottle	Body	8	Aqua		
33	T-143, St. Id, 0.58-0.66 mbs	Bottle	Body	1	Clear	1870s- post	
34	T-143, St. Id, Fea. 1, 0.60- 0.80 mbs	Vial, Medicine	Body	1	Aqua		
35	T-143, St. Id, Fea. 1, 0.60- 0.80 mbs	Vial, Medicine	Body	1	Aqua		
36	T-143, St. Id, 0.60-0.66 mbs	Bottle	Body	2	Green		
37	T-143, St. Id, 0.60-0.66 mbs	Bottle	Body	4	Olive		
38	T-143, St. Id, 0.60-0.66 mbs	Bottle	Body	4	Clear		
39	T-143, St. Id, 0.60-0.66 mbs	Bottle	Body	2	Aqua		
40	T-143, St. Id/II, 1.0 mbs	Bottle	Base- body	1	Brown	1800- post	
41	T-143, St. Id/II, 1.0 mbs	Bottle, Medicine	Body-lip; base	2	Green	America n; 1870s- post	"Laroche, Kina"
Acc. # 143-A-	Prov.	Misc. Type	Portion	No.	Material	Origin; Age	Description
42	T-143, St. Id, Fea. 1	Brick	Fragment	1		1918- 1978	red color, machine- made
43	T-143, St. Id, Fea. 1	Button	Complete	1	Porcelain		no holes, wire shank
44	T-143, St. Id, Fea. 1	Window glass	Fragment	11	Glass		
45	T-143, St. Id, Fea. 1	Light bulb, lamp	Fragment	4	Glass		

Acc. # 143-A-	Prov.	Misc. Type	Portion	No.	Material	Origin; Age	Description
46	T-143, St. Id, Fea. 1	Milled plank	Fragment	1	Wood		wood with nail
47	T-143, St. Id, Fea. 1	Nail	Fragment	11	Metal	1850-post	corroded, but probably wire nails/brads
48	T-143, St. Id, Fea. 1	Nail, Wire	Complete	1	Metal	1850-post	Wire nail with flagging tape
49	T-143, St. Id, Fea. 1	Nail/brad	Fragment	6	Metal	1850-post	corroded
50	T-143, St. Id, Fea. 1	Pebble	Complete	1	Stone		oval pebble
51	T-143, St. Id, Fea. 1	Sheathing for unknown item	Fragment	2	Metal		flat, thin, copper
52	T-143, St. Id, Fea. 1	Slate	Fragment	6	Slate		roofing item?
53	T-143, St. Id, Fea. 1	Unknown	Fragment	3	Composite		fused mass; charcoal, metal, etc.
54	T-143, St. Id, Fea. 1	Unknown	Fragment	5	Metal		flat, corroded
55	T-143, St. III	Shoe - sole & heel	Fragment	1	Leather		heel not built-up; children's heel



T-143 ceramic fragments (Acc. # 143-A-1 to A-4) – interior - from Stratum Id, 0.6-0.8 mbs



T-143 ceramic fragments (Acc. # 143-A-1 to A-4) – exterior - from Stratum Id, 0.6-0.8 mbs



T-143 ceramic artifact (Acc. # 143-A-5) - interior - from Stratum Id, 0.6 mbs



T-143 ceramic artifact (Acc. # 143-A-5) - exterior - from Stratum Id, 0.6 mbs



T-143 ceramic fragments (Acc. # 143-A-8 to A-14) – exterior - from Stratum Id, 0.60-0.66 mbs



T-143 ceramic fragments (Acc. # 143-A-8 to A-14) – interior - from Stratum Id, 0.60-0.66 mbs





T-143 ceramic fragments (Acc. # 143-A-15 to A-18) – exterior - from Stratum Id-II, 0.98 mbs



T-143 ceramic fragments (Acc. # 143-A-15 to A-18) – interior - from Stratum Id-II, 0.98 mbs





T-143 ceramic fragments (Acc. # 143-A-19 to A-28, shown left to right and top to bottom) – exterior - from Stratum Id-II, 1.0 mbs



T-143 ceramic fragments (Acc. # 143-A-19 to A-28, shown left to right and top to bottom) – interior - from Stratum Id-II, 1.0 mbs



T-143 ceramic plate (Acc. # 143-A-19) from Stratum Id-II, 1.0 mbs



T-143 ceramic plate (Acc. # 143-A-21) from Stratum Id-II, 1.0 mbs



T-143 ceramic plate from (Acc. # 143-A-21) – interior - Stratum Id-II, 1.05 mbs



T-143 ceramic plate (Acc. # 143-A-21) – exterior – Stratum Id-II, 1.05 mbs





T-143 glass fragments (Acc. # 143-A-29 to A-33) from Stratum Id, 0.58-0.66 mbs



T T-143 glass fragments (Acc. # 143-A-34 to A-39) from Stratum Id, 0.60-0.66 mbs



T-143 glass bottle fragments (Acc. # 143-A-40 to A-41) from Stratum Id-II, 1.0 mbs

## T-143 Terrestrial vertebrate material collected individually during excavation

Acc. #	Stratum	Depth (cmbs)	Feature	Family/Class	Species	Element	Description	Modification
143-F-1	Id	60-80	-	Bovidae (cow)	<i>Bos taurus</i>	Tibia (distal portion); Ribs; Vertebra	Fragments	Butchered (cut with metal blade)
143-F-2	Id	60-80	-	Canidae (dog)	<i>Canis lupus familiaris</i> (possible)	Diaphysis sections/irregular bones; Vertebrae	Fragments	None
143-F-3	Id	60-80	-	Mammalia	Medium mammal	Ulna	Fragment	None
143-F-4	Id/II	98	-	Bovidae (cow)	<i>Bos taurus</i>	Humerus diaphysis section	Fragment	Butchered (cut with metal blade on both ends)
143-F-5	Id/II	100	-	Bovidae (cow)	<i>Bos taurus</i>	Rib	Fragment	None
143-F-6	Id/II	100	-	Suidae (pig)	<i>Sus scrofa</i>	Femur; Canine tooth; Diaphysis sections	Fragments	None
143-F-7	Id/II	100	-	Aves (bird)	Unidentified	Femur; Diaphysis sections	Fragments	None
143-F-8	III	144	-	Bovidae (goat)	<i>Capra aegagrus hircus</i>	Cranium; Maxilla with premolars/molars (pieces mend); Cervical vertebra	Fragments	Burn marks on cranium (frontal bone/horn)



### 3.39 Test Excavation 144 (T-144)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	982
<b>TMK#:</b>	2-1-051[Plat]
<b>Elevation Above Sea Level:</b>	1.5 m
<b>UTM:</b>	618414 mE, 2355794 mN
<b>Max Length/Width/Depth:</b>	3.05 m / 0.90 m / 0.80 mbs
<b>Orientation:</b>	325 / 145° TN
<b>Targeted Project Component:</b>	Guideway Column
<b>USDA Soil Designation:</b>	Fill land (FL)

**Setting:** Test Excavation 144 (T-144) was located on the southwest (*makai*) side of Halekauwila Street, 20.0 m northwest of the Coral Street intersection. T-144 was approximately 23.0 m northwest of the historic Mother Waldron Park. T-144 was on public property owned by the City and County of Honolulu. The nearest utility to T-144 included a fire hydrant jacket. The excavation surface was level with the surrounding road surface.

**Summary of Background Research and Land Use:** According to the 1884 Bishop Honolulu map, T-144 was located within LCA 7713 (awarded to V. Kamamalu). The 1897 Monsarrat Honolulu map indicated that T-144 was located southeast of three small ponds and southwest of urban development. The 1933 and 1943 WAR maps indicated T-144 was within the Halekauwila Street alignment and the 1953 Army Mapping Service Honolulu map indicated that T-144 was situated within the Mother Waldron Playground.

Previous archaeological investigations within the vicinity of T-144 included an archaeological monitoring project at the Kaka'ako Improvement District 3 area in which 20 human burials were encountered. Eleven burials (SIHP # 50-80-14-5820) were in and around Mother Waldron Park (SIHP # 50-80-14-1388), directly adjacent to the West Kaka'ako Zone corridor; and nine burials were discovered at the Pohulani Elderly Rental Housing (SIHP # 50-80-14-4380). In 2009 O'Hare et al. performed an archaeological inventory survey in which material representing a former marsh/pond sediment of the pre-contact and pre-Hawaiian occupation was recovered. Similar results were compiled in 2009 by Tulchin et al. as clay sediments composed of a typical wet, marsh-type environment was encountered. Within the same area in 1998, Hammatt and Chiogioji performed an archaeological assessment of Mother Waldron Playground which indicated that the corner of Halekauwila and Cooke Streets was the reinterment site for twelve burials within a brick lined planting area labeled "KAPU." Near the area Pammer et al. (in progress) completed an archaeological inventory survey which included historic building remnant features (SIHP # -7124), an extensive layer of burnt historic debris (SIHP # -7189), old

salt pan remnants (SIHP # - 7190), and a sandy cultural layer containing one pre-contact/early post-contact fire pit feature (SIHP # 7197).

**Documentation Limitations:** T-144 was excavated to a depth of 0.80 mbs. The test excavation was terminated upon encountered a concrete jacket.

**Stratigraphic Summary:** The observed strata for T-144 included concrete (Ia) and sandy gravelly loam fill (Ib). The stratigraphy conformed to the USDA Fill land (FL) soil designation. The water table was not encountered and the excavation was terminated upon encountering a fire hydrant jacket.

**Artifacts Discussion:** No artifacts were collected.

**Features Discussion:** No features were observed.

**Terrestrial Faunal Remains Collected During Excavation:** No terrestrial faunal remains were collected individually during excavation.

**Sample Results:** No samples were collected.

**GPR Discussion:** A review of amplitude slice maps indicated a linear feature but it was not encountered during excavation but a concrete jacket was encountered. Reflectivity was relatively uniform throughout the grid and decreases with depth except for the linear feature. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.25 mbs.

GPR depth profiles for T-144 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.3 mbs. No utilities were observed in the profile although a concrete jacket was encountered during excavation. The maximum depth of clean signal return was approximately 0.9 mbs.

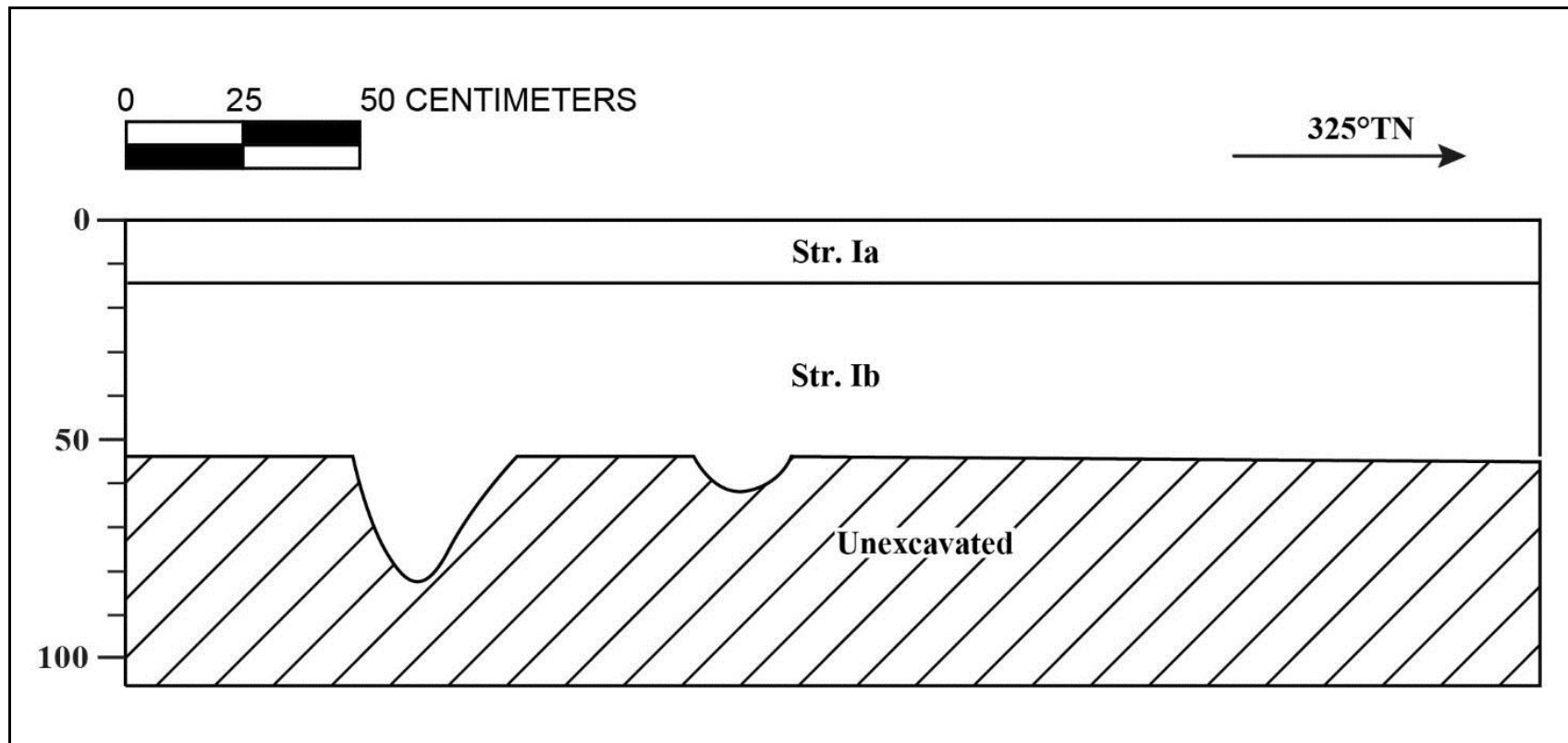
**Summary:** T-144 was excavated to a depth of 0.80 mbs and terminated upon encountering a buried concrete jacket. No natural sediments were observed. No cultural materials were identified.



T-144 general location (view to east).



T-144 southwest profile wall.



T-144 southwest wall profile.

Stratum	Depth (cmbs)	Description
Ia	0-15	Concrete; sidewalk
Ib	14-80	Fill; 10 YR 4/1 (dark gray); silty sandy gravelly loam; structureless, single-grain; moist, friable consistency; non-plastic; mixed origin; lower boundary not visible; common, medium-coarse root; contained ceramic, cut faunal bone, bottle glass; coral cobbles-fine sand fill material

### 3.40 Test Excavation 145 (T-145)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	982
<b>TMK#:</b>	2-1-051:007
<b>Elevation Above Sea Level:</b>	1.5 m
<b>UTM:</b>	618420 mE, 2355800 mN
<b>Max Length/Width/Depth:</b>	3.07 m / 0.95 m / 1.50 m
<b>Orientation:</b>	314 / 134° TN
<b>Targeted Project Component:</b>	Guideway Column
<b>USDA Soil Designation:</b>	Fill land (FL)

**Setting:** Test Excavation 145 (T-145) was located in Halekauwila Street between Keawe Street and Coral Street intersections. T-145 was located on City owned property. The nearest utilities included a sewer line 2.7 m northeast and a sewer line 2.7 m northeast. The surrounding topography was level.

**Summary of Background Research and Land Use:** According to the 1884 Bishop Honolulu map, T-145 was located within LCA 7713 (awarded to V. Kamamalu). The 1897 Monsarrat Honolulu map indicated that T-145 was located southeast of three small ponds and southwest of urban development. The 1933 and 1943 WAR maps indicated T-145 was within the Halekauwila Street alignment and the 1953 Army Mapping Service Honolulu map indicated that T-145 was situated within the Mother Waldron Playground.

Previous archaeological investigations within the vicinity of T-145 included an archaeological monitoring project at the Kaka'ako Improvement District 3 area in which 20 human burials were encountered. Eleven burials (SIHP # 50-80-14-5820) were located in and around Mother Waldron Park (SIHP # 50-80-14-1388), directly adjacent to the West Kaka'ako Zone corridor; and nine burials were discovered at the Pohulani Elderly Rental Housing (SIHP # 50-80-14-4380). In 2009 O'Hare et al. performed an archaeological inventory survey in which material representing a former marsh/pond sediment of the pre-contact and pre-Hawaiian occupation was recovered. Similar results were compiled in 2009 by Tulchin et al. as clay sediments composed of a typical wet, marsh-type environment was encountered. Within the same area in 1998, Hammatt and Chiogioji performed an archaeological assessment of Mother Waldron Playground which indicated that the corner of Halekauwila and Cooke Streets was the reinterment site for twelve burials within a brick lined planting area labeled "KAPU." Near the area Pammer et al. (in progress) completed an archaeological inventory survey which included historic building remnant features (SIHP # -7124), an extensive layer of burnt historic debris (SIHP # -7189), old salt pan remnants (SIHP # - 7190), and a sandy cultural layer containing one pre-contact/early post-contact fire pit feature (SIHP # 7197).

**Documentation Limitations:** T-145 was excavated to the water table at a depth of 1.50 mbs. A possible *imu* (Feature 9) was observed at 0.74-0.92 mbs in the western end of the excavation.



Hand excavation commenced and continued to the maximum depth. There were no factors that limited the documentation of T-145.

**Stratigraphic Summary:** The stratigraphy of T-145 consisted of fill strata overlying natural sediments. The observed strata included asphalt (Ia), extremely gravelly loam (Ib), very gravelly loam (Ic), extremely gravelly sand (Id), natural silty sand (II), and natural medium to coarse sand (III). The stratigraphy generally conformed to the USDA Fill land (FL) soil designation.

**Artifacts Discussion:** Two glass bottle fragments of one bottle (Acc. # 145-A-1, see following photograph) were collected from Stratum Ic at 0.7 mbs. The bottle was made between the 1890s and the 1920s, indicating a fill event for Stratum Ic in the late nineteenth to early twentieth century.

**Features Discussion:** Two features were observed within T-145, which were considered to be components of the buried A-horizon (SIHP # 50-80-14-5820) and designated SIHP# -5820 Features 9 and 10. The culturally-enriched buried A-horizon was also identified within T-141, T-142, T-146A, T-150, T-151, and T-151A. SIHP# -5820 Feature 9 and 10 within T-145 are 2 of 25 total features that were considered to be associated within the buried A-horizon.

Feature 9 was a possible *imu* pit originating from Stratum II at 0.74 mbs and extending to 0.92 mbs. The feature was observed in situ in the western end of the excavation and documented on the southwest excavation sidewall and in plan. Thermally-altered basalt stones, charcoal flecking, and faunal bone were observed within the feature with appeared to be consistent with an earthen oven (*imu*). A sediment sample was collected from Feature 9 for sample analysis, which is presented below.

Feature 10 was observed directly beneath imported fill, Stratum Ic. The feature originated approximately 0.70 mbs and terminated at 1.1 mbs. Feature 10 consisted of darker-colored sandy loam and appeared to be previously disturbed by the overlying fill deposition. The feature was considered to be a pit of indeterminate function with straight to slightly sloping walls and a flat base. A sediment sample was collected from Feature 10 for sample analysis, which is presented below.

**Terrestrial Faunal Remains Collected During Excavation:** Faunal remains were collected individually during excavation from Stratum Ic (at 0.7 mbs) and from the Stratum II/III interface (at 0.76 mbs). The Stratum Ic faunal remains consisted of *Bos taurus* ribs and a thin irregular bone from an unidentified Aves (bird). The *Bos taurus* ribs had been butchered with a metal blade, indicating an historic and not traditional Hawaiian origin. The faunal remains collected from the Stratum II/III interface were associated with the culturally enriched sand A-horizon (a component of SIHP# 50-80-14-5820) and consisted of unidentified medium mammal skeletal elements, some of which showed evidence of being butchered with a metal blade, indicating an historic and not traditional Hawaiian origin.

**Sample Results:** A total of four bulk sediment samples and one screened sample were collected within T-145. The samples were all wet-screened. One 2-liter bulk sample, collected from Stratum II (0.59-0.77 mbs), contained charcoal (1.1g), burned crustacean (2.4g), burned Echinodermata *mathaei* sp. (0.3g), fish bone fragments (0.2 g), and naturally-deposited shell. A screened sample collected from Feature 9 (0.76 mbs) contained possible marine shell midden (7.9g), a bottle glass fragment (0.9g), and fire-cracked rock (112.8g). A 2.5-liter bulk sample

collected from Feature 9 (0.81-0.95 mbs) yielded charcoal (1.4 g), possible marine shell midden (5.6g), and naturally deposited shell. The charcoal from the bulk sediment sample collected from Feature 9 was submitted for wood taxa identification and subsequent radiocarbon analysis. A 2-liter bulk sample, collected from Feature 10 (0.95-1.10 mbs), yielded charcoal (0.2g), crustacean (1.4g), Neritidae *Nerita picea* (1.3g), Mytilidae *Brachidontes crebristriatus* (0.8g), Strombidae *Strombus sp.* (0.7g), Echinodermata (0.1g), and an unidentified medium mammal bone fragment (1.3g). The charcoal from the bulk sediment sample collected from Feature 10 was submitted for wood taxa identification.

Wood taxa identification was performed on the charcoal samples collected from Feature 9 and Feature 10. The analysis identified only native taxa within Feature 9 including identified cf. *Sida fallax* ('Ilima), *Diospyros sandwicensis* (*Lama*), and a monocot. The analysis identified Polynesian-introduced and historically-introduced taxa within Feature 10.

Radiocarbon analysis was performed on the 'Ilima charcoal sample collected from Feature 9. The analysis yielded one possible date range, with a calibrated 2-sigma date of 1480 AD to 1650 AD (95.4%) being the most probable (see Radiocarbon results at the end of the section).

The results of sample analysis supported the identification Features 9 and 10 as culturally-enriched deposits associated with the former land surface (SIHP# -5280) within T-145. Feature 9 contained charcoal representing all native wood taxa that dated to the pre-Contact period between 1480 AD and 1650 AD. Sample analysis indicated that Feature 9 likely represented an in situ pre-contact *imu* pit. Feature 10 contained charcoal representing Polynesian-introduced and historically-introduced wood taxa. The inclusion of historically-introduced wood taxa within Feature 10 may indicate previous disturbance to the feature or a post-Contact depositional origin.

**GPR Discussion:** A review of amplitude slice maps indicated a linear feature but not within the excavation location. Reflectivity was relatively uniform throughout the grid and decreases with depth except for the linear feature. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.75 mbs.

GPR depth profiles for Excavation 145 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.2 mbs. No utilities were observed in the profile. The maximum depth of clean signal return was approximately 1.0 mbs.

**Summary:** T-145 was excavated to a maximum depth of 1.50 mbs where the water table was encountered. The stratigraphy of T-145 consisted of fill strata (Ia to Ic) overlying natural sediments (II and III). The stratigraphy generally conformed to the USDA Fill land (FL) soil designation. Two glass bottle fragments of a minimum of one bottle (Acc. # 145-A-1) were collected from Stratum Ic at 0.7 mbs. The bottle was made between the 1890s and the 1920s, indicating a fill event for Stratum Ic in the late nineteenth to early twentieth century. Two features were observed within, or extending from Stratum II of T-145, which were considered to be components of the culturally-enriched buried A-horizon (SIHP # 50-80-14-5820) and designated SIHP# -5820 Features 9 and 10. A total of four bulk sediment samples and one screened sample were collected within T-145. The samples were all wet-screened. Wood taxa identification was performed on the charcoal samples collected from Feature 9 and Feature 10.

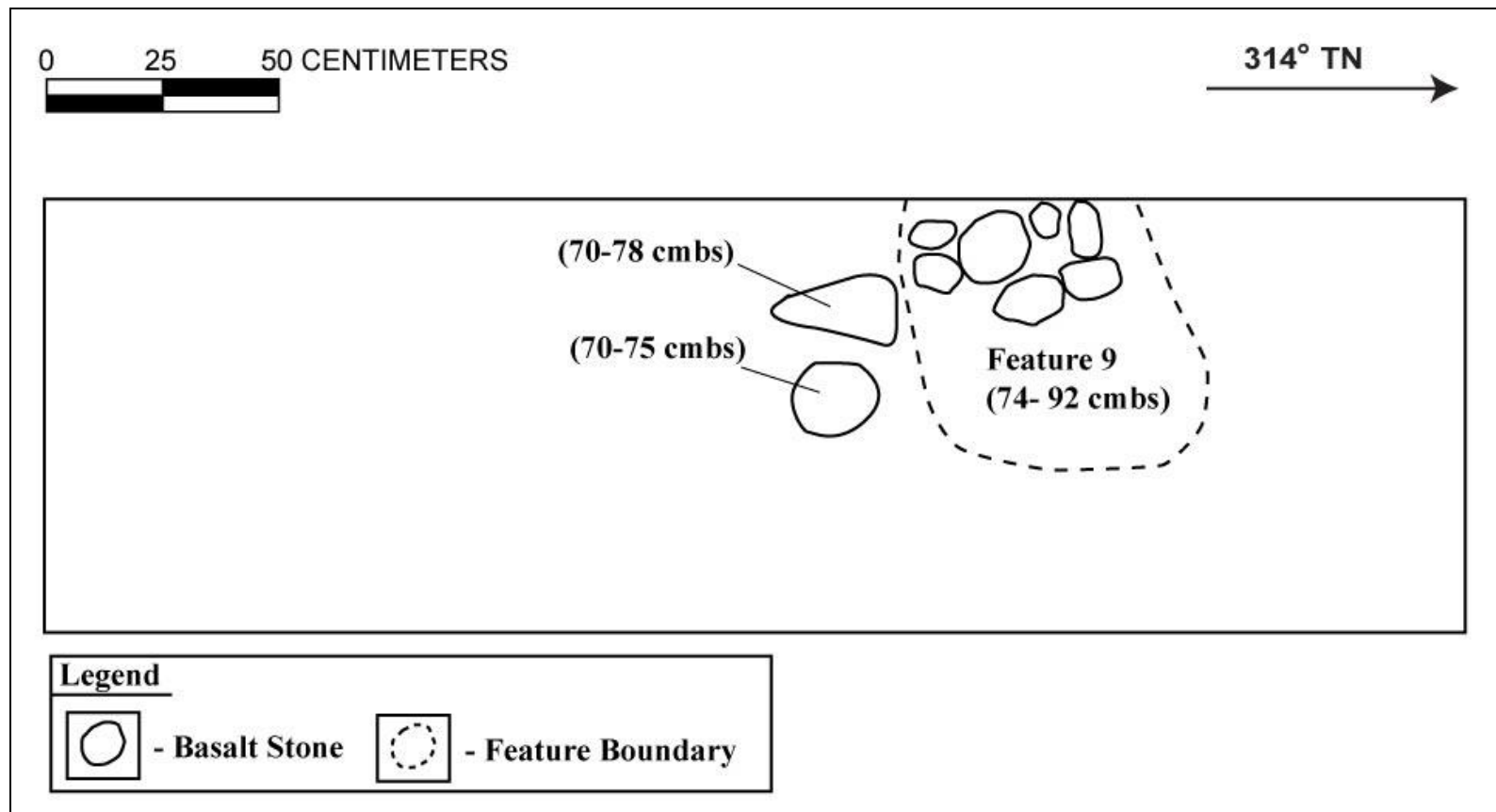
Radiocarbon analysis was performed on the charcoal sample collected from Feature 9. The results of sample analysis supported the identification Features 9 and 10 as culturally-enriched deposits associated with the former land surface (SIHP# -5280) within T-145. Feature 9 contained charcoal representing all native wood taxa that dated to the pre-Contact period between 1480 AD and 1650 AD. Sample analysis indicated that Feature 9 likely represented an in situ pre-contact *imu* pit. Feature 10 contained charcoal representing Polynesian-introduced and historically-introduced wood taxa. The inclusion of historically-introduced wood taxa within Feature 10 may indicate previous disturbance to the feature or a post-Contact depositional origin. The former land surface within T-145 (II) and the two associated features (Feature 9 and 10) have been designated as components of SIHP# 50-80-14-5820, which has also been identified within T-141, T-142, T-146A, T-150, T-151, and T-151A. A complete description of SIHP# -5820 is presented in Volume I.



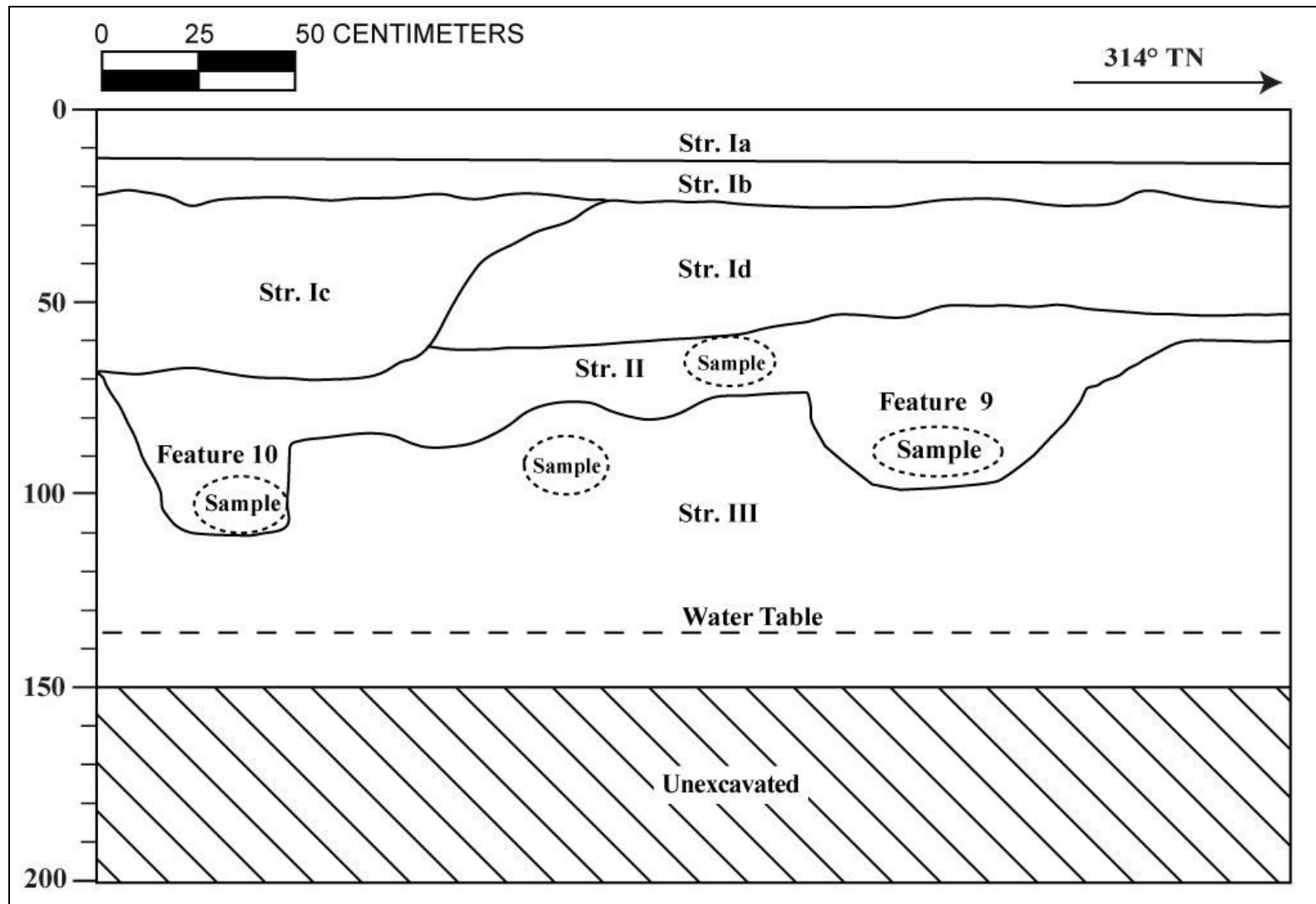
T-145 general location, view to northwest



T-145 southwest profile wall showing SIHP# -5820 Feature 9, view to west



T-145 Plan view showing SIHP# -5820 Feature 9



T-145 southwest wall profile

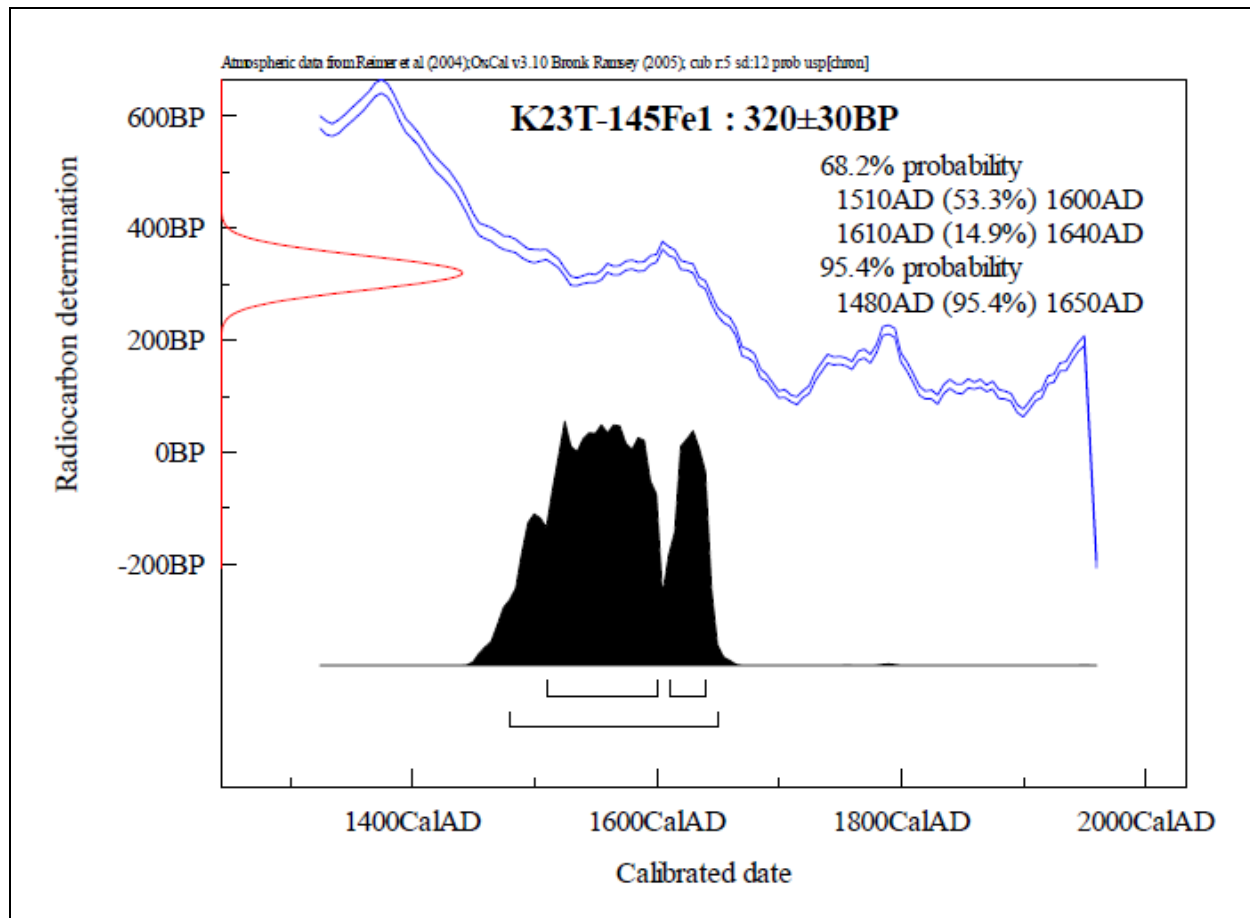


## T-145 Stratigraphic Description

Stratum	Depth (cmbs)	Description
Ia	0-14	Asphalt
Ib	14-25	Fill; 10YR 4/2 (dark grayish brown); extremely gravelly loam; structureless, single-grain; moist, very friable consistency; non-plastic; terrigenous origin; abrupt, smooth lower boundary; imported fill
Ic	23-70	Fill; 10YR 4/2 (dark grayish brown) with mottles (inclusion, sand) 10.5Y 7/6 (yellow); very gravelly loam; structureless, single-grain; moist, very friable consistency; non-plastic; terrigenous origin; diffuse, broken/discontinuous lower boundary; contains glass shards, faunal bone, marine shell; imported fill, sand inclusions
Id	25-64	Fill; 10 YR 8/2 (very pale brown); extremely gravelly sand; structureless, single-grain; moist, loose consistency; non-plastic; marine origin; very abrupt, smooth lower boundary; imported crushed coral fill
II	50-87	Natural; 10YR 4/3 (brown); silty sand; structureless, single-grain; moist, loose consistency; non-plastic; mixed origin; diffuse, wavy lower boundary; natural sediment; buried A-horizon (SIHP# 50-80-14-5820) including Feature 9 and 10
III	75-150	Natural; 10.5YR 7/6 (yellow); medium to coarse grain sand; structureless, single-grain; wet, non-sticky consistency; non-plastic; marine origins; lower boundary not visible; natural sediment



T-145 glass bottle fragments of one bottle (Acc. # 145-A-1) from Stratum Ic



T-145 Radiocarbon Results for SIHP# -5820 Feature 9

### 3.41 Test Excavation 146 (T-146)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	7712:6
<b>TMK#:</b>	2-1-051
<b>Elevation Above Sea Level:</b> --	1.56 m
<b>UTM:</b>	618445 mE, 2355759 mN
<b>Max Length/Width/Depth:</b>	3.05 m / 0.90 m / 0.43 m
<b>Orientation:</b> --	128 / 308° TN
<b>Targeted Project Component:</b>	Guideway Column
<b>USDA Soil Designation:</b> --	Fill land (FL)

**Setting:** Test Excavation 146 (T-146) was located on Halekauwila Street in between the Coral Street and Cooke Street intersection. The excavation surface was level with the surrounding land surface.

**Summary of Background Research and Land Use:** According to the 1884 Bishop Honolulu map T-146 was located within LCA 7712:6 awarded to V. Kamamalu. The 1897 Monsarrat Honolulu map indicated that T-146 was located southeast of three small ponds and southwest of urban development. The 1933 and 1943 WAR maps indicated T-146 was within the Halekauwila Street alignment. By 1953 the Army Mapping Service Honolulu map indicated that T-146 was situated within Mother Waldron Playground.

Previous archaeology of the surrounding area included several studies. An archaeological inventory survey approximately 135 m northwest of T-146 identified material representing a former marsh/pond sediment of the pre-contact and pre-Hawaiian occupation (O'Hare et al 2009). Similar results were compiled in an archaeological inventory survey for the Halekauwila Place Project as clay sediments composed of a typical wet, marsh-type environment was encountered (Tulchin et al 2009). T-146 was within the border of archaeological monitoring in the Coral and Queen Street area in which nine burials (SIHP # - 4380) were recorded (Douglas 1991a & b). In 2011 an AIS located approximately 135 m northwest of T-146 included historic building remnant features (SIHP # -7124), an extensive layer of burnt historic debris (SIHP # - 7189), old salt pan remnants (SIHP # - 7190), and a sandy cultural layer containing one pre-contact/early post-contact fire pit feature (SIHP # 7197) (Pammer et al 2011).

**Documentation Limitations:** T-146 was excavated to a depth of 0.43 mbs. A concrete jacket present throughout T-146 limited documentation.

**Stratigraphic Summary:** The stratigraphy of T-146 consisted of fill strata. Observed strata included concrete (Ia) and cobbly gravelly sand (Ib) overlying a concrete jacket. The stratigraphy conformed to the USDA soil survey designation of Fill land (FL).

**Artifact Discussion:** No artifacts were observed.

**Feature Discussion:** No features were observed.

**Terrestrial Faunal Remains Collected During Excavation:** No terrestrial faunal remains were collected individually during excavation.

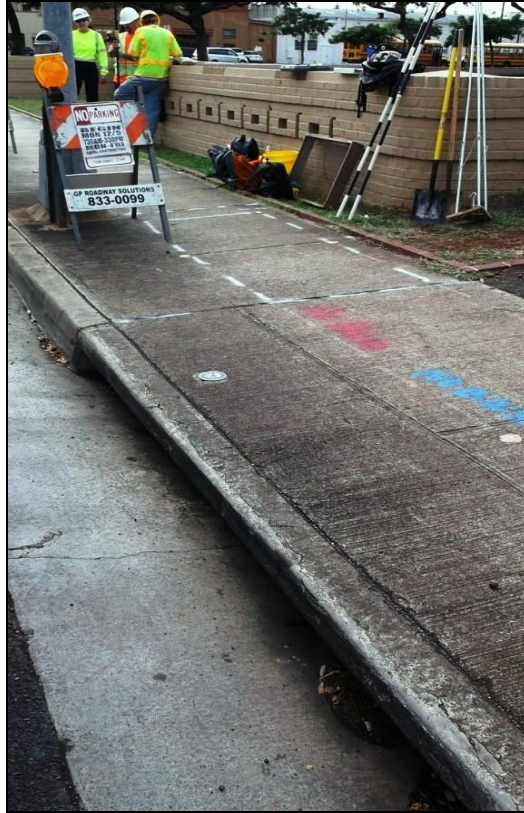
**Sample Results:** No sample analysis was conducted.

**GPR Discussion:** A review of amplitude slice maps indicated a linear feature that seems to correspond to the concrete slab that was encountered. Reflectivity was relatively uniform throughout the grid and decreases with depth. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.5 mbs.

GPR depth profiles for T-146 identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.25 mbs. An anomaly was observed in the profile and corresponds to the PVC pipe that was encountered during excavation. The maximum depth of clean signal return was approximately 1.0 mbs.

**Summary:** T-146 was excavated to a depth of 0.43 mbs. The stratigraphy of T-146 consisted of fill strata (Ia-Ib). The stratigraphy conformed to the USDA soil survey designation of Fill land (FL). No natural sediment was observed. No cultural resources were identified within T-146.



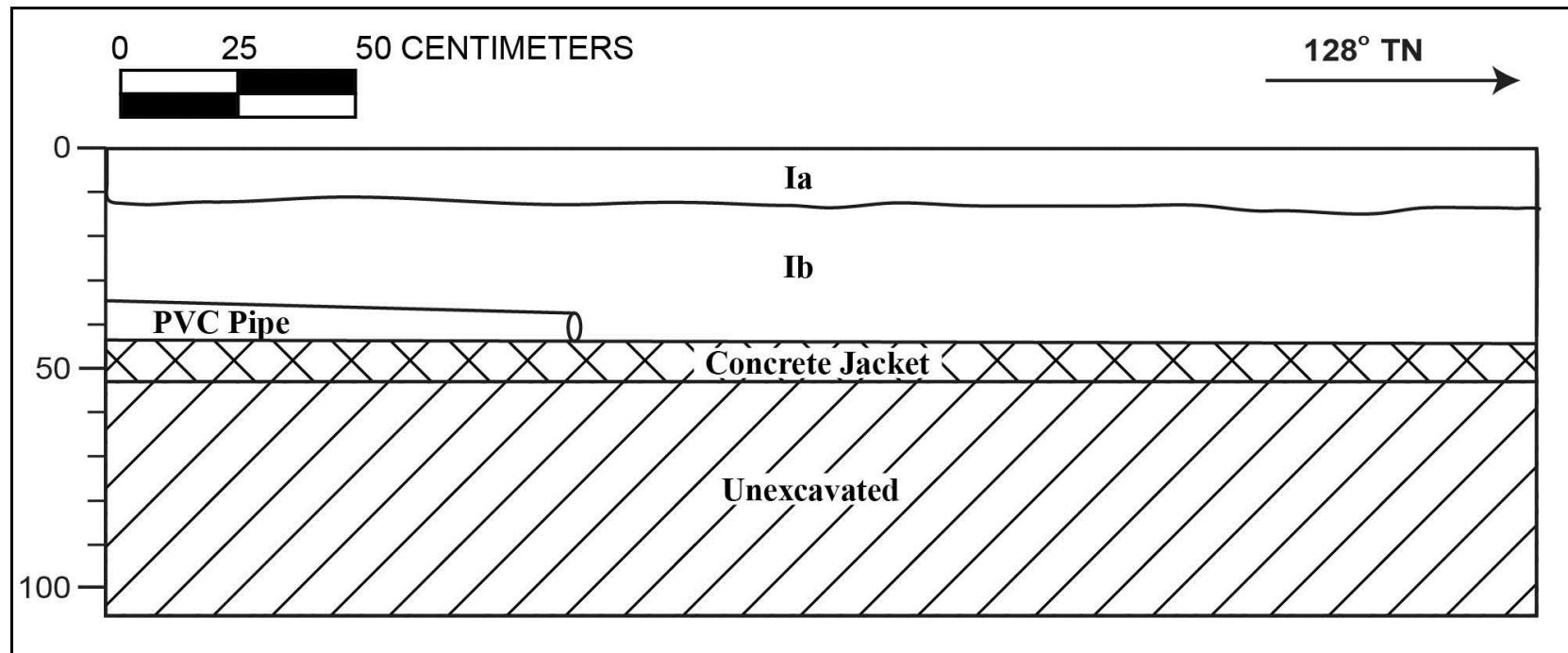


T-146 general location (view to south)



T-146 northeast profile wall (view to east).





T-146 northeast wall profile.

## T-146 Stratigraphic Description

Stratum	Depth (cmbs)	Description
Ia	0-12	Asphalt
Ib	12-43	Fill; 10 YR 4/1 (light grayish brown); cobbly gravelly sand; structureless, single-grain; dry, loose consistency; non-plastic; mixed origin; very abrupt, smooth lower boundary; sandy fill with coral and basalt cobbles; contained volcanic glass

### 3.42 Test Excavation 146A (T-146A)

<b>Ahupua'a:</b>	Honolulu
<b>LCA:</b>	7712:6
<b>TMK#:</b>	2-1-051
<b>Elevation Above Sea Level:</b>	1.5 m
<b>UTM:</b>	618455.3194 mE, 2355767.573 mN
<b>Max Length/Width/Depth:</b>	3.1 m / 1.05 m / 1.67 mbs
<b>Orientation:</b>	140 / 320° TN
<b>Targeted Project Component:</b>	Guideway Column
<b>USDA Soil Designation:</b>	Ewa silty clay loam (EmA)

**Setting:** T-146A was located on Halekauwila Street between the Coral Street and Cooke Street intersection. The original T-146 encountered a subsurface concrete jacket and could not be completely excavated. T-146A was an additional excavation added to further investigate and delineate the boundaries of a subsurface cultural deposit (SIHP #50-80-14-5820). T-146A also investigated a guideway column location. A sewer line was located 3.6 m south of T-146A, a gas line 3.23 m south, and a water line 4.4 m south. The excavation surface was slightly elevated with the surrounding land surface.

**Summary of Background Research and Land Use:** According to the 1884 Bishop Honolulu map T-146A was located within LCA 7712:6 awarded to V. Kamamalu. The 1897 Monsarrat Honolulu map indicated that T-146A was located southeast of three small ponds and southwest of urban development. The 1933 and 1943 WAR maps indicated T-146A was within the Halekauwila Street alignment. By 1953 the Army Mapping Service Honolulu map indicated that T-146A was situated within Mother Waldron Playground.

Previous archaeology of the surrounding area included several studies. An archaeological inventory survey located approximately 160.0 m northwest of T-146A identified buried former marsh or pond sediment (O'Hare et al. 2009). Similar results were compiled in an archaeological inventory survey for the Halekauwila Place Project as marsh-type sediment was encountered (Tulchin et al. 2009). T-146A was located approximately 13.0 m northeast of archaeological monitoring in the Coral and Queen Street area in which nine burials (SIHP # - 4380) were recorded (Douglas 1991a & b). In 2011 an archaeological inventory survey located approximately 160.0 m northwest of T-146A documented historic building remnant features (SIHP # -7124), an extensive layer of burnt historic debris (SIHP # -7189), old salt pan remnants (SIHP # - 7190), and a sandy cultural layer containing one pre-Contact/early post-Contact fire pit feature (SIHP # 7197) (Pammer et al. 2011).

**Documentation Limitations:** T-146A was excavated to a depth of 1.67 mbs and beneath the water table at 1.49 mbs. The west end of T-146A was widened at 0.20 mbs due to the presence of a buried concrete jacket. All of the natural sediment within T-146A was hand-excavated to beneath the water table.

**Stratigraphic Summary:** The stratigraphy of T-146A consisted of fill material (Ia-Ic) overlying natural sediment (II-III). Observed strata included concrete (Ia), gravelly sandy loam (Ib), a buried concrete utility jacket (Ic) overlying natural very sandy loam (II) and medium to coarse sand (III) to beneath the water table. The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA).

**Artifacts Discussion:** Two traditional Hawaiian artifacts (Acc. # 146A-A-1 to A-2) were collected from Stratum II. Artifacts consisted of two pieces of volcanic glass debitage from Feature 12 and two pieces of volcanic glass debitage from Feature 14.

**Features Discussion:** A total of seven features (Feature 11-17) were identified within T-146A, extending from the lower boundary Stratum II into Stratum III. The buried A-Horizon (II) has been designated as a component of SIHP# 50-80-14-5820, which has also been identified within T-141, T-142, T-145, T-150, T-151, and T-151A. The seven features within T-146A have been designated as Features 11-17 of SIHP# -5820. Features 1-10 of SIHP# -5820 were identified within T-141 (1-4), T-142 (5-8 and 30), and T-145 (9-10).

SIHP# -5820 Feature 11 appeared to be an irregular-shaped pit that was identified within Stratum II, extending from 0.61 mbs to 0.76 mbs. The feature was observed in plan, and extended into the southwest excavation sidewall. Feature 11 was considered to be a pit of indeterminate function. A bulk sediment sample was collected for sample analysis, and the results are presented below.

SIHP# -5820 Feature 12 appeared to be an irregular-shaped pit that was identified near the lower boundary of Stratum II, extending from 0.75 mbs to 1.10 mbs. The feature was observed in plan and documented within the northeast excavation sidewall. The installation of a subsurface concrete utility jacket located immediately adjacent to Feature 12 may have disturbed or truncated the northeast portion of the feature. Feature 12 was considered to be a pit of indeterminate function.

SIHP# -5820 Feature 13 appeared to be an irregular-shaped pit that was identified near the lower boundary of Stratum II, extending from 0.83 mbs to 0.94 mbs. The feature was observed in plan, and extended into the northwest end of the excavation. Feature 13 was considered to be a pit of indeterminate function.

SIHP# -5820 Feature 14 appeared to be an irregular-shaped pit that was identified near the lower boundary of Stratum II, extending from 0.84 mbs to 0.95 mbs. The feature was observed in plan. Feature 14 was considered to be a pit of indeterminate function.

SIHP# -5820 Feature 15 appeared to be an irregular-shaped pit that was identified near the lower boundary of Stratum II, extending from 0.84 mbs to 0.92 mbs. The feature was observed in plan, and extended into the southeast end of the excavation. Feature 15 was considered to be a pit of indeterminate function.

SIHP# -5820 Feature 16 appeared to be an oval-shaped pit that was identified at the lower boundary of Stratum II, extending from 0.93 mbs to 1.06 mbs. The feature was observed in plan, and extended into the southwest excavation sidewall. Feature 16 was considered to be a pit of indeterminate function.

SIHP# -5820 Feature 17 appeared to be a circular-shaped pit that was identified beneath the lower boundary of Stratum II, extending from 1.21 mbs to 1.35 mbs. The feature was observed in

plan. Feature 17 was considered to be a pit of indeterminate function that may have extended from the base of or from within Feature 15.

**Terrestrial Faunal Remains Collected During Excavation** Faunal remains were collected individually during excavation from Stratum Ic (0.42-0.67 mbs) and from Stratum II, Feature 15 of SIHP# 50-80-14-5820 (0.81-0.92 mbs and 0.84-0.92 mbs). The Stratum Ic faunal remains consisted of unmodified *Sus scrofa* and *Canis lupus familiaris* skeletal elements. The faunal remains collected from Feature 15 between 0.81 and 0.92 mbs consisted of unmodified medium mammal skeletal elements, and the faunal remains collected from Feature 15 between 0.81 and 0.92 mbs consisted of unmodified *Sus scrofa* and *Canis lupus familiaris* skeletal elements. None of the remains showed any indication of cultural modification; both identified species (*Sus scrofa* and *Canis lupus familiaris*) are Polynesian introductions common in both pre- and post-Contact contexts.

**Sample Results:** Sediment samples were collected from SIHP# -5820 Features 11-16. All of the sediment samples were wet-screened.

Two five-liter bulk sediment samples, collected from the east and west ends of Feature 11 between 0.61-0.76 mbs, contained charcoal (1.1 g), naturally-deposited marine shell (1.0 g), unidentified burnt shell fragments (1.2 g), burnt Tellinidae *Tellina palatam* (0.7 g), burnt Neritidae (0.6 g), Tonnidae *Tonna dolium* (0.5 g), burnt Crustacean (0.1 g), and burned fish bone (0.1 g).

A five-liter bulk sediment sample, collected from Feature 12 between 0.75-0.90 mbs, contained charcoal (1.2 g), limpets (1.2 g), limpets and gastropods (0.9 g), Naticidae *Natica sp.* (0.2 g), Carditidae (0.1 g), Melampidae *Melampus sp.* (0.1 g), Crustacean (0.7 g), unidentified burnt shell (0.4 g), basalt (788.2 g), a vesicular fire-cracked rock fragment (176.4 g), and volcanic glass (0.2 g). The volcanic glass pieces that were identified within Feature 12 were submitted for EDXRF analysis. EDXRF analysis indicated that the volcanic glass clearly does not match sources from Hawaii County. The sample is from "Group 1", one of two distinct geochemical groups identified from the 35 City Center AIS EDXRF volcanic glass samples, likely representing different volcanic sources on O'ahu (see EDXRF discussion in Volume V). The charcoal that was collected from Feature 12 was submitted for wood taxa identification. Wood taxa analysis identified native and Polynesian-introduced taxa including kukui (*Aleurites moluccana*), hau (*Hibiscus tiliaceus*), niu (*Cocos nucifera*), and 'a'ali'i (cf. *Dodonaea viscosa*). One unknown taxa was also represented. Following wood taxa identification, the niu charcoal collected from Feature 12 was submitted for radiocarbon analysis. Radiocarbon analysis yielded four possible date ranges, with a calibrated 2-sigma date of 1630 AD to 1690 AD (51.3%) being the most probable.

A five-liter bulk sediment sample and a 19 liter screen were collected from Feature 13 between 0.83-0.95 mbs. The samples contained charcoal (1.2 g), Melampidae *Melampus sp.* (0.2 g), unidentified fish bone (0.2 g), unidentified medium mammal bone (0.2 g), Crustacean (0.2 g), Echinodermata *diadema sp.* (0.1 g), Mytilidae *Brachidontes crebristriatus* (0.9 g), Naticidae *Natica sp.* (0.5 g), Tellinidae *Tellina sp.* (0.5 g), Neritidae *Theodoxus neglectus* (0.3 g), Isognomidae *Isognomon sp.* (0.1 g), and fire-cracked rock (63.2 g). The charcoal that was collected from Feature 13 was submitted for wood taxa identification. Wood taxa analysis identified native and Polynesian-introduced taxa including kolomona (cf. *Senna sp.*), kukui

(*Aleurites moluccana*), 'ōhi'a lehua (cf. *Metrosideros polymorpha*), and hau (*Hibiscus tiliaceus*). One unknown taxa was also represented. Following wood taxa identification, the kukui charcoal collected from Feature 13 was submitted for radiocarbon analysis. Radiocarbon analysis yielded four possible date ranges, with a calibrated 2-sigma date of 1630 AD to 1690 AD (51.3%) being the most probable.

A five-liter bulk sediment sample and 19 liter screen were collected from Feature 14 between 0.85-1.01 mbs. The samples contained charcoal (0.1 g), limpets and gastropods (0.4 g), Melampidae (0.1 g), Tellinidae *Tellina palatam* (0.9 g), Crustacean (0.2 g), Echinodermata *diadema sp./mathaei sp.* (0.2 g), Mytilidae *Brachidontes crebristriatus* (0.2 g), Strombidae *Strombus sp.* (2.3 g), burned wood (0.1 g), unidentified fish bone (0.2 g), fire-cracked rock (9.0 g), and volcanic glass (1.0). The volcanic glass pieces that were identified within Feature 14 were submitted for EDXRF analysis. EDXRF analysis indicated that the volcanic glass clearly does not match sources from Hawaii County. The sample is from "Group 1", one of two distinct geochemical groups identified from the 35 City Center AIS EDXRF volcanic glass samples, likely representing different volcanic sources on O'ahu (see EDXRF discussion in Volume IV). The charcoal that was collected from Feature 14 was submitted for wood taxa identification. Wood taxa analysis identified native taxa including niu (*Cocos nucifera*) and 'ōhi'a lehua (cf. *Metrosideros polymorpha*). Following wood taxa identification, the niu charcoal collected from Feature 14 was submitted for radiocarbon analysis. Radiocarbon analysis yielded one possible date range, with a calibrated 2-sigma date of 1490 AD to 1670 AD (95.4%) being the most probable.

Two five-liter bulk sediment samples were collected from Feature 15 between 0.84-0.92 mbs. The samples contained charcoal (2.3 g), unidentified shell fragments (1.4 g), Naticidae (0.6 g), Hipponicidae *Hipponix sp.* (0.4 g), Melampidae *Melampus sp.* (0.3 g), snail (0.2 g), Turbinidae *Turbo sandwicensis* (juvenile) (0.1 g), Strombidae *Strombus sp.* (3.1 g), Tellinidae *Tellina palatam* (2.2 g), Neritidae *Nerita picea* (2.4 g), Neritidae *Theodoxus neglectus* (0.5 g), Crustacean (1.0 g), Echinodermata (0.7 g), Echinodermata *diadema sp.* (0.2 g), Mytilidae *Brachidontes crebristriatus* (0.1 g), basalt fragment (135.9 g), unidentified fish bone (0.1 g), unidentified medium mammal bone (0.6 g), pig (*Sus scrofa*) bone (0.1 g), and dog (*Canis lupus familiaris*) bone (0.2 g). The charcoal that was collected from Feature 15 was submitted for wood taxa identification. Wood taxa analysis identified native and Polynesian-introduced taxa including kukui (*Aleurites moluccana*) and pilo (cf. *Coprosma sp.*). Three unknown taxa were also represented. Following wood taxa identification, the pilo charcoal collected from Feature 15 was submitted for radiocarbon analysis. Radiocarbon analysis yielded three possible date ranges, with a calibrated 2-sigma date of 1720 AD to 1820 AD (53.5%) being the most probable.

A five-liter bulk sediment sample, collected from Feature 16 between 0.93-1.06 mbs, contained gastropods (0.5 g), unidentified fish bone (0.1 g), Mytilidae *Brachidontes crebristriatus* (1.1 g), Crustacean (0.3 g), and Isognomidae *Isognomon sp.* (0.1 g).

The results of sample analysis indicated that Features 12-14 were deposited during the pre-Contact period as evidenced by the presence of possible traditional food refuse, the absence of historic cultural material, and pre-Contact (pre-1778) radiocarbon date ranges for collected charcoal. Feature 15, which also contained possible traditional food refuse and lacked historic cultural material, yielded a radiocarbon date range for collected charcoal of 1720-1820 AD,



indicating that the feature was likely deposited during the late pre-Contact to early post-Contact period. EDXRF analysis from volcanic glass collected from Feature 12 and Feature 14 indicated that the debitage likely originated from a source on O'ahu Island. The results of sample analysis support the identification of the buried A-horizon (II) and associated features (Features 11-17) as components of a subsurface cultural deposit (SIHP# -5820).

**GPR Discussion:** A review of amplitude slice maps indicated a linear feature which is a storm drain and is not within excavation boundaries. Reflectivity was relatively uniform throughout the grid and decreases with depth except for the storm drain. A transition from higher reflectivity to lower reflectivity was observed at approximately 0.25 mbs.

GPR depth profiles for T-146A identified horizontal banding, commonly associated with stratigraphic layering, throughout the survey area. This banding corresponded to variations of density and chemical composition within fill deposits. The profile also indicated a change in reflectivity occurring around 0.2 mbs. An anomaly was observed in the profile but not within the excavation boundaries. The maximum depth of clean signal return was approximately 1.10 mbs.

**Summary:** T-146A was excavated to a depth of 1.67 mbs and beneath the water table at 1.49 mbs. The stratigraphy of T-146A consisted of fill material (Ia-Ic) overlying natural sediment (II-III). The stratigraphy did not conform to the USDA soil survey designation of Ewa silty clay loam (EmA). A total of seven features (Feature 11-17) were identified within T-146A, extending from the lower boundary of the A-horizon (Stratum II). The seven features within T-146A have been designated as Features 11-17 of SIHP# -5820. Sediment samples were collected from SIHP# -5820 Features 11-16. The results of sample analysis indicated that Features 12-14 were deposited during the pre-Contact period. Feature 15 was likely deposited during the late pre-Contact to early post-Contact period. EDXRF analysis from volcanic glass collected from Feature 12 and Feature 14 indicated that the debitage likely originated from a source on O'ahu Island. The results of sample analysis support the identification of the buried A-horizon (II) and associated features (Feature 11-17) as components of a subsurface cultural deposit (SIHP# -5820). A complete description of SIHP# -5820 is provided in Volume I.



T-146A general location, view to southeast



T-146A northeast profile wall

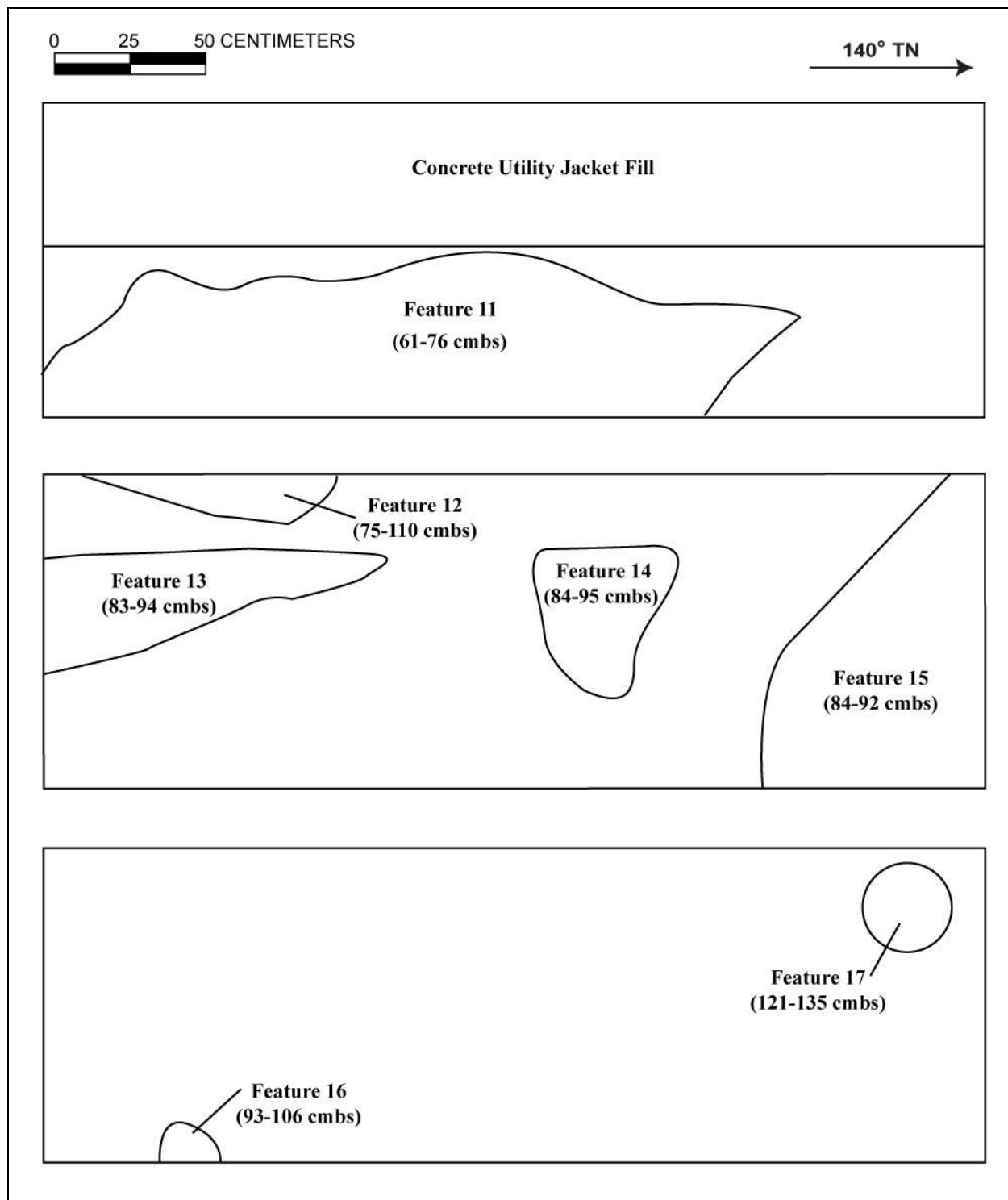




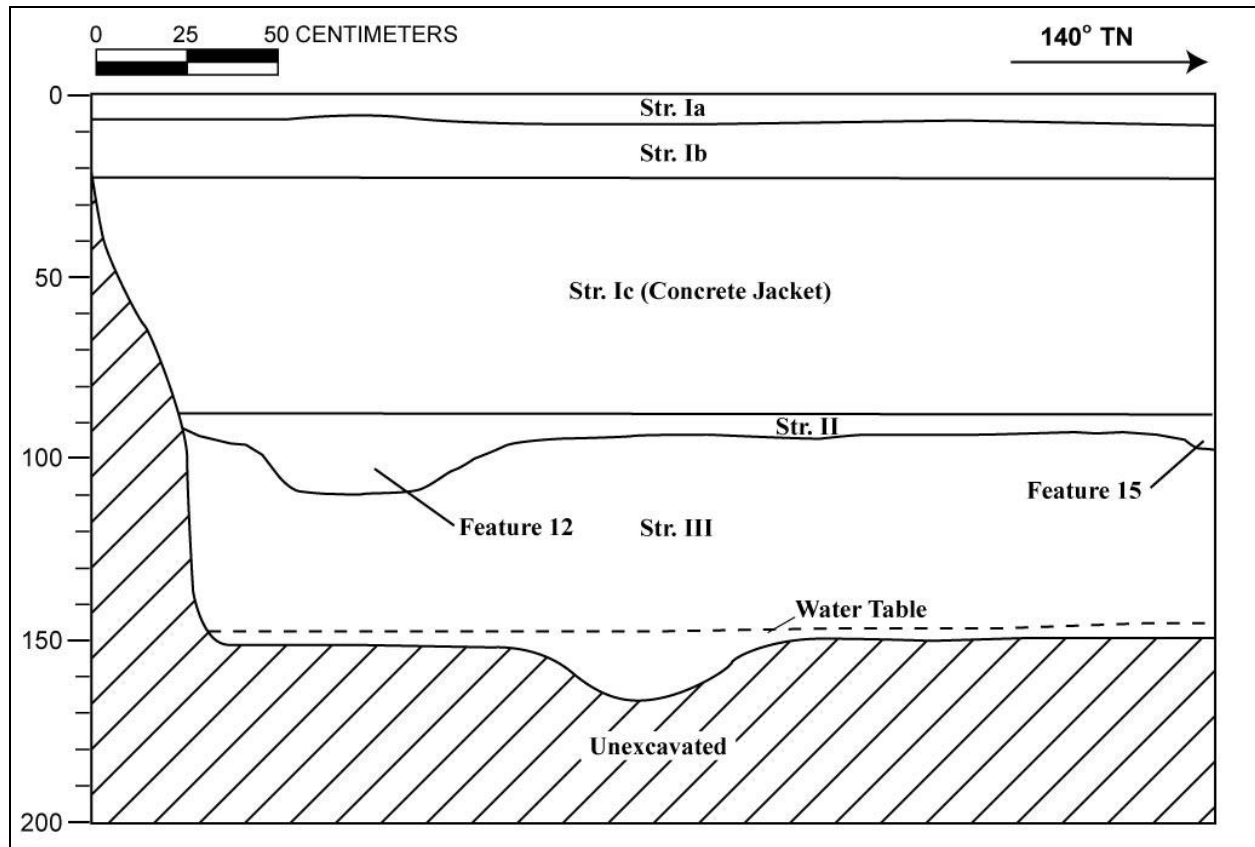
T-146A overview showing SIHP# -5820 Feature 11, view to northwest



T-146A overview showing SIHP# -5820 Features 12-15, view to northwest



T-146A plan view of the lower boundary of Stratum II showing SIHP# -5820 Features 11-17



T-146 northeastwall profile

## T-146A Stratigraphic Description of northeast wall

Stratum	Depth (cmbs)	Description
Ia	1-9	Concrete sidewalk
Ib	9-23	Fill; 10 YR 2/2 (very dark brown); gravelly sandy loam; weak, fine, blocky structure; moist, friable consistency; non-plastic; terrigenous origin; very abrupt, smooth lower boundary
Ic	23-87	Concrete utility jacket
II	87-110	Natural; 10 YR 3/2 (very dark gray); fine to medium very sandy loam; weak, fine, crumb structure; moist, friable consistency; non-plastic; mixed origin; diffuse, wavy lower boundary; buried A-horizon (SIHP# 50-80-14-5820) with Features 11-17
III	90-167	Natural; 10 YR 7/4 (very pale brown); medium to coarse sand; structureless, single-grain; moist, friable consistency; non-plastic; marine origin; lower boundary not visible